DIGITAL TECHNOLOGIES
IN AUSTRALIAN PUBLIC SCHOOLS

A narrative study of government policies

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ABSTRACT

Policies advocating the use of digital technologies in government schools are promoted by all public school education systems in Australia. This is reflected in the release of political media statements, policies, plans, budgets, digital networking rollouts, curriculum developments, and professional development activities. Resources are being directed towards such initiatives from within school education budgets and from departmental and ‘whole of government’ initiatives, at state, territory and federal levels. While there is considerable activity being supported by governments, outside of these activities academic publications specifically about these school level initiatives are limited.

This research sets out to answer the question: ‘what does public schooling mean in Australia in the 21st century given its past tradition of free, compulsory and secular schooling, and given the present policies that are urging the ubiquitous use of digital technologies?’ The purpose of this research is to interpret, understand and explain the policies of the public schooling systems in Australia advocating the use of digital technologies. In doing so, this thesis aims to contribute to the development of a stock of Australian research specifically in the schooling sector, about the use of digital technologies in schools. Further, this thesis aims to stimulate and add to the conversations concerning these policies. It is argued that the use of digital technologies in schooling has the capacity to redefine what has previously been understood by ‘public schooling’.

This thesis is the outcome of an interpretative social inquiry where narrative theory and hegemony have provided its theoretical bases. This thesis has not set out to merge these theories nor has it attempted to reconcile the internal differences within them, but rather, to draw from them, and to use approaches that are pertinent to this study. While such an approach may be contentious and bring some inherent difficulties, the intention of the
research has been to draw upon the abstract understandings afforded by these theories and apply them to concrete, particular, yet newly emerging educational activities. This is to provide interpretative and explanatory perspectives to the advocated use of digital technologies in Australian schools and systems, and, in Chapter Six, to forward a proposition for future action.

There are several different ways in which this thesis could have been approached and finally could have been structured. Likewise, there are many avenues that require research but have been left without investigation due to limitations of size, space and time. This is not to negate their importance, but rather it is to recognise the limits of this project and to highlight the necessity for more research to be undertaken.

Throughout the thesis distance education has been considered in conjunction with the policies directly impinging upon ‘face to face’ schooling. It is argued that with the advocated use of digital technologies as an inherent part of public schooling, there is emerging, a convergence in these two styles of schooling. Further it is argued that experiences from school level distance education practitioners have the potential to offer some insights that may be useful for those in ‘face to face’ schools using digital technologies. It is intended then, that the implications from this research will have the capacity to influence how we view centrally developed school education policies, curriculum leadership and management as well as what is intended to happen in the classroom.

The thesis has been arranged into three parts. The first three chapters comprise Part One. Chapter One identifies the research space for the thesis. This is achieved by describing the fields of research from which this thesis draws, and introduces the theoretical bases used in the research space identified for this thesis. Chapter Two provides the theoretical bases for the thesis in more detail. In doing so, positivist approaches to the research are rejected. Chapter Three describes the research methods used to interpret,
understand and explain the public schooling sectors’ digital technologies policies. Together, these three chapters provide an outline of the nature of the research undertaking, and the theories and methods used.

Part Two also has three chapters. These are structured around the temporal concept important to narrative theory; that of the past, the present and the future. Chapter Four looks to the past and provides an account of the history and three traditions, it is argued, impinge upon this research project. In particular, this chapter discusses what was intended by the phrase ‘public education’ in Australia during the 19th and 20th centuries. This chapter establishes the context for the interpretations of the policies that follow. Chapter Five seeks to understand and explain the policy narratives of the present, defined as the research period between 1997 and 2001. This period of time is thought of as sitting temporally between the past history and traditions outlined in Chapter Four and the possible scenarios for the future, proposed in Chapter Six.

Part Three brings the thesis to its conclusion by reflecting on the central question identified for this thesis: ‘what does public schooling mean in Australia in the 21st century, given its past tradition of free, compulsory and secular schooling, and given the present policies that are urging the ubiquitous use of digital technologies?’
ACKNOWLEDGEMENTS

Undertaking a PhD is a whole lifestyle, and so to write this thesis has only been possible with the support and encouragement that has been provided from a wide range of sources. I would like to take the opportunity here to acknowledge and thank those people.

Between 1998 and 2001 I received leave without pay from the Department of Education, Training and Employment (DETE) and took up a scholarship at Swinburne University of Technology. Initially the scholarship was provided through the Graduate School of Management and later (for administrative purposes), through the School of Business. I would like to thank DETE and both Schools within Swinburne University for the opportunity to undertake a PhD. I would also like to thank Professors Eleanor Ramsay and John Wilson for providing referee statements as part of my application for the scholarship. It would not have been possible however to take up this scholarship without the support of my immediate work colleagues at the Open Access College in South Australia. In particular, I would like to thank John Dabinett (Manager, Access Media), Marg Beagley (Executive Principal, Open Access College) and Kevin Richardson (Executive Director DETE). All have been supportive of my research, both within South Australia and nationally.

Dr Barbara Lasky has been a wonderful principal supervisor. She has read each piece of writing I have ever generated, immediately she has received it. No matter the quality, she has considered it with kindness and respect. She has provided thoughtful and challenging feedback to my manuscripts, and I am sure my work is better for it. Barbara too, has supported me to undertake challenges. Along with me, she has been willing to take risks, and that in my view is part of what doing a PhD involves. My second supervisor, Dr Geoffrey Drummond, has always been there.
Throughout this PhD study period, Dr Barbara Lasky’s research candidates have met each month to discuss our respective research projects. I would like to thank all my fellow students for these discussions. In particular, I would like to thank Ms Bonna Jones (soon to be Doctor), for her ongoing support and interest in my research. Her feedback to my writing has been much appreciated.

It would not have been possible to do a project such as this without the participation of those who formally took part in the research conversations. As will be seen, these people were drawn from a wide range of backgrounds, locations and experiences. I appreciate their good will in participating in this study.

Writing this thesis has benefited from discussions with friends and colleagues. In particular I would like to thank Ross Johnson from the Australian Bureau of Statistics; Antonio Mercurio, who has read my manuscripts and provided feedback to them; and Felix Hudson and my son Che, who have provided feedback to the chapter about open source code.

My family have patiently provided support in many ways. Irma and Arthur Heathfield (my mother and her husband), helped me move boxes of gear around, and Mum helped me with filing. Che Moyle has kept my computer running and burnt CDs to back up my files. His partner Tegan Jaensch has helped me with other administrative tasks.

I would like to thank Esther Grounds, Sean Leahy and Andrew Stephens for providing me with a place to live in Melbourne. My friends and family have each provided emotional support and tolerated my absences from social life. Finally, I would like to thank my partner Chris White. He has read my pieces of writing, debated points and provided an emotionally and intellectually rich home life. It has been three years to remember with joy.

To all of you I say ‘thank you’, and of course, any mistakes in this thesis, are mine.
DECLARATION

This thesis contains no material which has been accepted for the award to the candidate of any other degree or diploma, except where due reference is made in the text of the thesis. To the best of my knowledge the thesis contains no material previously published or written by another person except where due reference is made in the text of the thesis.

Kathryn Moyle
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<th>Full Form</th>
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<tr>
<td>ACACA</td>
<td>Australasian Curriculum, Assessment and Certification Authorities</td>
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<td>AADES</td>
<td>Australasian Association of Distance Education Schools</td>
</tr>
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<td>AAP</td>
<td>Australian Associated Press</td>
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<tr>
<td>ABC</td>
<td>Australian Broadcasting Commission</td>
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<tr>
<td>ABS</td>
<td>Australian Bureau of Statistics</td>
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<td>ACER</td>
<td>Australian Council for Educational Research</td>
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<tr>
<td>ACT</td>
<td>Australian Capital Territory</td>
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<tr>
<td>AESOC</td>
<td>Australian Education Systems Officials Committee</td>
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<td>AIEAC</td>
<td>Australian Information Economy Advisory Committee</td>
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<td>AIMIA</td>
<td>Australian Interactive Multimedia Industry Association</td>
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<tr>
<td>ALP</td>
<td>Australian Labor Party</td>
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<td>ANZSIC</td>
<td>Australian and New Zealand Standard Industrial Classification</td>
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<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
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<tr>
<td>CESCEO</td>
<td>Conference of Education Systems Chief Executive Officers</td>
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<tr>
<td>CIT</td>
<td>Canberra Institute of Technology</td>
</tr>
<tr>
<td>DCILGP</td>
<td>Department of Communication and Information, Local Government and Planning (Queensland)</td>
</tr>
<tr>
<td>DCITA</td>
<td>Department of Communication, Information Technology and the Arts</td>
</tr>
<tr>
<td>DECS</td>
<td>Department of Education and Children’s Services (South Australia)</td>
</tr>
<tr>
<td>DECS</td>
<td>Department of Education and Community Services (Australian Capital Territory)</td>
</tr>
<tr>
<td>DEET</td>
<td>Department of Education, Employment and Training (Victoria)</td>
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<td>DEST</td>
<td>Department of Education, Science and Training</td>
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<td>DET</td>
<td>Department of Education and Training (New South Wales)</td>
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<td>DETE</td>
<td>Department of Education, Training and Employment (South Australia)</td>
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<tr>
<td>DETYA</td>
<td>Department of Education, Training and Youth Affairs</td>
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<tr>
<td>DoE</td>
<td>Department of Education (Northern Territory and Tasmania)</td>
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<tr>
<td>EdNA</td>
<td>Education Network Australia</td>
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<td>EDS</td>
<td>Electronic Data Services</td>
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<td>EDWA</td>
<td>Education Department of Western Australia</td>
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<td>EQ</td>
<td>Education Queensland</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>ERC</td>
<td>EdNA Reference Committee</td>
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<td>FOLP</td>
<td>Framework for Open Learning Programme</td>
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<td>FSF</td>
<td>Free Software Foundation</td>
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<tr>
<td>FTE</td>
<td>Full time equivalent</td>
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<tr>
<td>GPL</td>
<td>General Purpose Licence</td>
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<tr>
<td>GST</td>
<td>Goods and Services Tax</td>
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<tr>
<td>HF</td>
<td>High Frequency</td>
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<tr>
<td>HREOC</td>
<td>Human Rights and Equal Opportunity Commission</td>
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<tr>
<td>ICPA</td>
<td>Isolated Children’s Parents’ Association</td>
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<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
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<tr>
<td>IE</td>
<td>Information Economy</td>
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<td>IEPO</td>
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<td>IPAC</td>
<td>Information Policy Advisory Council</td>
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<td>IRC</td>
<td>Internet Relay Chat</td>
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<tr>
<td>IT</td>
<td>Information Technology</td>
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<td>IT &amp; T</td>
<td>Information Technology and Telecommunications</td>
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<tr>
<td>KBPS</td>
<td>Kilobits per second</td>
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<tr>
<td>LATIS</td>
<td>Learning and Technology in Schools</td>
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<tr>
<td>MCEETYA</td>
<td>Ministerial Council on Education, Employment, Training and Youth Affairs</td>
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<tr>
<td>MCIE</td>
<td>Ministerial Council for the Information Economy</td>
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<tr>
<td>MEMO</td>
<td>Memorandum</td>
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<tr>
<td>MGPS</td>
<td>Megabits per second</td>
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<td>MOVEET</td>
<td>Ministers of Vocational Education, Employment and Training</td>
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<td>NBEET</td>
<td>National Board of Employment, Education and Training</td>
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<tr>
<td>NCSA</td>
<td>National Center for Supercomputing Application</td>
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<tr>
<td>NMDN</td>
<td>National Materials Development Network</td>
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<tr>
<td>NOIE</td>
<td>National Office of the Information Economy</td>
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<tr>
<td>NSW</td>
<td>New South Wales</td>
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<tr>
<td>NT</td>
<td>Northern Territory</td>
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<tr>
<td>NTN</td>
<td>Networking the Nation</td>
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<tr>
<td>NTOEC</td>
<td>Northern Territory Open Education Centre</td>
</tr>
<tr>
<td>LAN</td>
<td>Local Area Network</td>
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<tr>
<td>OAC</td>
<td>Open Access College (South Australia)</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>OC</td>
<td>Online Council</td>
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<tr>
<td>ODLAA</td>
<td>Open and Distance Learning Association of Australia</td>
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<tr>
<td>OECD</td>
<td>Organisation for Economic Cooperation and Development</td>
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<tr>
<td>OGO</td>
<td>Office for Government Online</td>
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<tr>
<td>OGIT</td>
<td>Office of Government Information Technology</td>
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<tr>
<td>OS</td>
<td>Operating system</td>
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<tr>
<td>OSC</td>
<td>Open Source Code</td>
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<tr>
<td>OSD</td>
<td>Open Source Definition</td>
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<tr>
<td>OSS</td>
<td>Open Source Software</td>
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<tr>
<td>PC</td>
<td>Personal computer</td>
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<tr>
<td>PMSEIC</td>
<td>Prime Minister’s Science, Engineering and Innovation Council</td>
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<td>QLD</td>
<td>Queensland</td>
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<tr>
<td>RTIF</td>
<td>Regional Technology Infrastructure Fund</td>
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<td>SA</td>
<td>South Australia</td>
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<td>SIDE</td>
<td>Schools of Isolated and Distance Education (Western Australia)</td>
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<td>SOCCI</td>
<td>Schools Online Curriculum Content Initiative</td>
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<tr>
<td>SPERA</td>
<td>Society for the Provision of Education in Rural Australia</td>
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<tr>
<td>TOLS</td>
<td>Tasmanian Open Learning Service</td>
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<tr>
<td>UK</td>
<td>United Kingdom</td>
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<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
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<td>US</td>
<td>United States</td>
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<td>USA</td>
<td>United States of America</td>
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<td>Tasmania</td>
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<td>TOLS</td>
<td>Tasmanian Open Learning Service</td>
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<td>VISE</td>
<td>Volunteers for Isolated Students Education</td>
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<tr>
<td>VET</td>
<td>Vocational Education and Training</td>
</tr>
<tr>
<td>WA</td>
<td>Western Australia</td>
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<tr>
<td>WAN</td>
<td>Wide Area Network</td>
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CONVENTIONS

Non-sexist language has been used throughout the body of thesis. Masculinist terminology however, is used in some of the historical documents and some of the older publications referred to throughout the thesis. Rather than cluttering the quotations with ‘sic’, the originals have been left unaltered.

The English spelling has been used throughout the thesis, although some quotations use the American spelling. The original spellings in the quotations have been maintained.

References to the Australian states, territories and the commonwealth are done so using the lower case. Where references are made to the apparatus of government by referring to it collectively as ‘the State’ (cf Held, Anderson, Gieben, Hall, Harris, Lewis, Parker, Turok 1984), a capital ‘S’ is used. Reference to the ‘Commonwealth of Australia’, as a title, uses the title case, and thus attracts a capital ‘C’.

Quotations extracted from the research conversations conducted for this study have been referenced by providing a pseudonym abbreviation to represent the name of the speaker, followed by the date the research conversation was held, and then the lines in the transcript from whence the extract has been taken. While the original transcriptions include indications of pauses and the use of the words such as ‘err’ and ‘umm’, for ease of reading, these have not been reproduced in the extracts included in the thesis unless they have been considered to add meaning to the argument being made. A brief description of each person is listed in the Character Descriptions outlined in Appendix Nine.
All references to funding amounts are provided in Australian dollars unless another country is indicated.

A distinction is made in the thesis between ‘national’ activities and ‘federal’ or ‘commonwealth’ activities. National activities refer to those activities that are the result of the combined efforts of all of the states and territories. Commonwealth or federal activities are those instigated by the commonwealth.

The phrase ‘digital technologies’ is used in preference to the phrase ‘information and communication technologies’ (ICTs). Both phrases however are used interchangeably in policy documents and academic papers. In Australian schooling systems’ policy documents, the term ‘ICTs’ tends to refer to the use of one or more of the following: computers, the Internet, local and wide area networks, and sometimes video-conferencing (cf Education Victoria 1999). The use of the telephone, high frequency (HF) radio, audio tapes, video tapes and television are not usually intended by the phrase ‘information and communication technologies’, in these documents. To understand the extent of its meaning and the intention of the phrase ‘ICTs’ as it is used in policy documents, often relies on an understanding by the reader of the context in which the terms are used. In this thesis the use of the phrase ‘digital technologies’ refers to computer hardware, software and telecommunications goods and services, and encompasses the description of the joint use of computers and the Internet, local and wide area networks. The use of the phrase ‘digital technologies’ sometimes can be limiting in that some telecommunications lines (for example) are not yet digital, however the use of the phrase ‘digital technologies’ has been preferred in this thesis as it more elegantly describes the various technologies intended as ‘information and communication technologies’. The phrase ‘information and communication technologies industry sector’ however has been used to be consistent with the public schooling sector policies that link schooling with the ‘information economy’ and the ICT industry sector. This is an attempt to aid clarity in reading specific parts of the thesis.
In December 2001 the Commonwealth Department of Education, Training and Youth Affairs (Commonwealth DETYA) was renamed as the Commonwealth Department of Education, Science and Training (DEST). The Department of the Industry, Science and Resources (ISR) was also renamed to the Department of Industry, Resources and Tourism. Citations throughout the thesis and in the Bibliography have used the names of government department as the authors, where they are accurate prior to December 2001. Citations to these government departments after this date use the new name to indicate authorship.
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PART ONE

Part One of this thesis comprises three chapters. Together, these three chapters establish the theoretical and methodological bases for the study. The first of these chapters’ outlines the question identified for the thesis, locates the space established for the research undertaking, and demonstrates that this thesis will contribute to the existing cache of Australian schooling sector research. The second chapter summarises the theoretical influences used within the research space identified, and the third chapter outlines the research methods employed in this study. These chapters as a group, set the stage for the arguments presented in Part Two.
CHAPTER ONE
IDENTIFYING THE RESEARCH SPACE

This chapter describes the research space identified for this thesis. It outlines the question for the thesis and illustrates how the thesis can contribute to the development of new understandings and a developing stock of Australian research, where the focus is on the policies advocating the widespread use of digital technologies in all of Australia’s public schools. In doing so this chapter introduces the theoretical basis for the thesis, in preparation for Chapter Two.

ADVOCATING THE USE OF DIGITAL TECHNOLOGIES IN AUSTRALIAN PUBLIC SCHOOLING

The commonwealth, and each state and territory in Australia have policies advocating the use of digital technologies as a core component of public schooling. The (then) Commonwealth Department of Education, Training and Youth Affairs (Commonwealth DETYA) renamed in December 2001 as the Commonwealth Department of Education, Science and Training (Commonwealth DEST), has the policy *Learning for the knowledge society. An education and training plan for the information economy*. One of its ‘key strategic directions’ advocates ‘the integration of ICT [information and communication technology] skills in all courses in all parts of the education and training sector’ (Commonwealth DETYA 2000a: 6). The national policy *Learning in an online world*. The school education action plan for the *information economy* states that the schooling sector has a ‘universal obligation to the children of Australia, to ensure that all young people enter the coming century with the necessary skills, knowledge and understandings’ (Education Network Australia (EdNA) 2000a: 2) to participate in the ‘information economy’. The use of the words ‘universal obligation’ implies that all students, irrespective of their geographical location, family income, physical abilities, gender or race are entitled to
develop the characteristics nominated in the national goal of schooling 1.6, (as outlined in Learning in an online world), which states that all students will leave school as ‘confident, creative and productive users of new technologies, including information and communication technologies, and understand the impact of those technologies on society’ (Ministerial Council on Employment, Education, Training and Youth Affairs (MCEETYA) 1999a: 2). In order to achieve these outcomes, one of the goals of the national policy Learning in an online world specifies that ‘every school must be able to access and afford connections to online services that enable them to teach young people effectively’ (EdNA 2000a: 8). Since the use of digital technologies is advocated as a core component in schooling, then access to the necessary infrastructure such as telecommunications (which is required for the use of the Internet), becomes important for the provision of public schooling. These are physical issues pertaining to digital technologies that it will be seen are directly relevant to providing public schooling in Australia in the 21st century.

Each of the states and territories has comparable policy statements echoing sentiments similar to each other and to those found in the commonwealth and national statements. The Australian Capital Territory has an Information Technology Services in Education plan, New South Wales has its Information and Communication Technologies Strategic Plan 2000-2003, and the Northern Territory has Learning and Technology In Schools (LATIS). Queensland includes digital technologies as a central component of its schooling sector policy State Education 2010, and South Australia has the policy statement DECS 2001. Like Queensland, Tasmania includes the central importance of digital technologies in schooling within its departmental policy, Learning Together. Victoria has its Information and Communication Strategy 2000-2004, and Western Australia has its Technology 2000 program. (A summary list of the state and territory, whole of education department policies and the specific digital technologies policy statements are provided in Appendix One). Both the major political parties in Australia, the Australian Labor Party (ALP) and the Liberal/National
Parties Coalition, identify as important, the use of digital technologies in schooling (cf Beazley 2001; Howard 2001a).

Policies advocating the widespread inclusion of digital technologies into public schooling (as will be illustrated in Chapter Five), draws into consideration a complex array of interactions with other state, territory, national and commonwealth policies within and beyond school education. Schools are included in national and state and territory policy documents that see schooling positioned within the ‘information economy’. This is indicated in the (then) Commonwealth DETYA plan, Learning for the knowledge society. An education and training action plan for the information economy (Commonwealth DETYA 2000a). This action plan links to the federal government’s policy, A Strategic Statement for the Information Economy which identifies as its second priority to ‘deliver the skills and education Australians need to participate in the information economy’ (Commonwealth of Australia National Office of the Information Economy (NOIE) 1998a: 5). The Ministers of Education likewise position schooling within the ‘information economy’, stating in their Joint statement on education and training in the information economy, that ‘in the information economy, quality education and training is fundamental to the well-being of individuals, communities and nations’ (MCEETYA 2000a: 1). A summary of each state and territory government economic and schooling sector policy documents (1997-2001) is provided in Appendix Two.

Since the proposed use of digital technologies is constructed by the commonwealth and each of the states and territories as a central tenet of Australian public schooling, this raises a question for this thesis: ‘what does public schooling mean in Australia in the 21st century?’

**A SPACE FOR RESEARCH**

In Australia, Kenway, Bigum, Fitzclarence, Collier and Tregenza (1994) have linked schooling, economic markets and digital technologies suggesting that together they have the capacity to ‘recast education in ways
as yet unimaginable’ (Kenway et al 1994: 322). These authors state that ‘educational researchers and others in education have been rather slow to cast a quizzical and critical eye’ (Kenway et al 1994: 322) over these initiatives. In a similar vein, in their literature review investigating research relevant to the impact of digital technologies in schooling, Bennett and Lockyer (1999) indicated that there was a ‘lack of published studies in this area’ (Bennett and Lockyer 1999: 3), observing that this ‘may reflect the relative immaturity of this field of research’ (Bennett and Lockyer 1999: 3). Further they found that these studies ‘do not yet form a connected or comprehensive body of knowledge’ (Bennett and Lockyer 1999: 4). They go on to note that ‘literature relevant to the topic is heavily dominated by studies originating from the United States’ (Bennett and Lockyer 1999: 5).

In an address to a national forum of senior state and territory government officers, the Secretary of the Tasmanian Department of Education and Community Services (DECS) Dr Martyn Forrest (2001), reiterated Bennett and Lockyer’s (1999) views. He stated that ‘we are actually lacking in some fairly fundamental research at the moment’ (Forrest 2001: lines 127-128). While some research is commissioned by the respective public schooling sectors and the commonwealth (cf Department of Education Training and Employment (DETE) (South Australia) 2000a; Downes and Gibbons 1999), the nature of this research tends to be consistent with Lingard and Blackmore’s observations that ‘many university based educational researchers have been brought into contract relationships within systems and schools to conduct evaluation research. This tends to be short term research for a very specific purpose’ (Lingard and Blackmore 1997: 8). They indicate that this research tends to use a ‘data based’ model of research, where the policy frameworks remain uncontested and where there is a demand by governments to produce the desired results quickly (Lingard and Blackmore 1997).

The Prime Minister’s Science, Engineering and Innovation Council (PMSEIC) also has expressed concern about the lack of independent
research about issues related to the use of digital technologies across the full range of industry sectors. They indicate that there is a lack of funding provided for this kind of non-partisan research. Their report shows that of the Total General Government Research and Development expenditure allocated for research in 2000 (as reflected through the Australian Research Council grants), 5.8% was allocated to investigating digital technologies initiatives across all industry sectors (PMSEIC 2000). This section of the funding did not address issues concerning school education or policy issues within school education. The classification of ‘education’ received 1.8% of the total funding available (PMSEIC 2000) for all research projects within that category.

This lack of independent published research can be set alongside the stated imperatives of each of the Australian government schooling systems where policies are advocating the use of digital technologies as core requirements. Expenditure on specific digital technologies initiatives, computer hardware, networking and Microsoft software (summarised respectively in Appendices Three, Four, Five and Six), reflect the identified policy priorities of each of the states and territories. It will be demonstrated that these policies equate digital technologies with educational change and progress (cf Australian Capital Territory Government 1997; Commonwealth DETYA 2000a; Department of Education (Tasmania) 2001a; EdNA 2000a; Education Queensland 1999a; MCEETYA 2000a), where it is claimed, often in a causal and unproblematic manner, that the proposed changes will be achieved by students demonstrating improved learning outcomes by using digital technologies. These policies state that the proposed improvements in students’ learning outcomes will include laying down the foundation skills for lifelong learning, and the development of the skills required for a more competitive labour market in a global economy. It will be argued too that these policies are using digital technologies as icons or symbols of efficiency and status, and as representations of a highly desirable future.
Given there is a lack of a consolidated body of research and much activity in the government sector concerning the advocated use of digital technologies in all public schools, it is argued that this represents a space for research that is in the process of developing and defining itself. It is to this space that this thesis aims to provide a contribution.

Existing Research

One important feature of this thesis is that it is specifically concerned with the schooling sector. While schooling sector research shares some common elements with similar initiatives undertaken within the university and training sectors, school level research differs from the other levels of education in that the students are legally minors and attendance at school is enforced through Acts of Parliament. That is, it is compulsory for all young people between the ages of six and fifteen or sixteen (depending on the state of Australia) to attend school (cf MCEETYA 1999b). There are numerous implications for research that flow from undertaking school level research, and one of these is to recognise that the research concerns young people who are not legally, emotionally, socially, educationally, nor physically an adult. The State takes an active interest in how schooling is provided to these students, and this is reflected in the Education Acts and their associated regulations, administrative instructions and guidelines. These documents reflect principles about what the State views are the purposes of schooling and the role of public education (cf Reid 1998, 2000). Lingard and Blackmore (1997) argue that research in education has characteristics that make it distinctive from other disciplines. Such research is complex, multidisciplinary and includes addressing social and cultural issues (Lingard and Blackmore 1997). The complexity of school level research is accentuated when considering the use of digital technologies as new and central components of schooling.

Several academic disciplines outside of school education have undertaken research about using digital technologies for a range of purposes. This includes work from the academic disciplines of information technology (IT)
(cf Corner 1999; Goetsch 1999; Reinhard 2001; Spiller 1998), cultural and media studies (cf Barr 2000; Cunningham 1991; Holmes, D. 1997; Morse 1998; Wertheim 1999; Wise 2000), law (cf Lindsay 1999, 2000a, 2000b, 2000c), business, management and economics (cf Balbin 2001; Dunt and Harper 2001; Gutzman 2001; Lamberton 1990/91, 2000; McLean 2000; Stewart 1998; Tapscott 1996), and the arts and graphic design (cf Langenfelds 1997; Vaughan 1994). Research concerning the use of digital technologies for social purposes has been undertaken by authors such as William Dutton (1999a) who has argued that ‘the study of technology and people has gained acceptance as a field of social inquiry, but it has remained outside the mainstream of the major disciplines and is dealt with as an interdisciplinary area of specialization across the social and economic sciences’ (Dutton 1999a: 5). Rob Kling (2000) has argued that ‘widespread Internet use has also stimulated substantial developments in different areas of potential application, such as electronic commerce, distance education, electronic publishing, digital libraries, and virtual communities’ (Kling 2000: 245). Research then, although not specifically intended for use in the schooling sector can have applicability to school education.

Researchers specifically within school education are also interested in issues pertinent to several disciplines that impinge upon schooling where it includes the use of digital technologies. These include pedagogical questions (cf Australian Journal of Educational Technology; British Journal of Educational Technology; Harel 2000; Heppell 1999a; McKenzie 1999; Papert 1980, 1999; Papert and Caperton 1999; Tapscott 1998; Turkle 1997; Williams, M. 1999); computer literacy (cf Blanchard 1999; Bromley 1992; Durrant and Green 2000; Heppell 1999b; Lankshear, Bigum, Green, Morgan, Murray, Synder, Wild 1997; Lankshear and Sydner 2000; Sydner 1999); instructional design approaches required for using digital technologies in teaching and learning (cf Abbey 2000; Boyle 1997; Harmon and Jones 1999; Journal of MultiMedia and Hypermedia; Oliver 1999; Willis, J. 2000); and financial, administrative and library requirements in schools (cf Bradley 1999; Cheever, Coburn, DiGiammarino, Kelman, Lowd,
Nalman, Sayer, Temkin and Zimmerman 1986; Journal of Library Administration). Further, intellectual property rights in digital environments (cf Butterworths 2001, 2000; Calvert 1995; Fitzgerald 2000; Kahin and Varian 2000; McKeough 1994) are emerging as dilemmas for the public schooling sector (cf Schools Online Curriculum Content Initiative (SOCCI) 2001a). Research in distance education is tackling issues concerning the use of digital technologies in schooling (cf Beagley 2001; Distance Education; Edmonds and Reid 1997; Moyle 1999, 2000, 2001), and there are computer hardware, software and information systems issues for schools to address (cf Coburn, Kelman, Roberts, Syder, Watt, Weiner 1985; Computer Education; Merrill, Hammons, Tolman, Marvin, Christensen, Vincent, Reynolds 1992; Russell 1994; Schiller 2000; Squires and McDougall 1994). Educational researchers are also interested in investigating the use of digital technologies and school change (cf Apple and Jungck 1998; Bigum and Kenway 1998; Blackmore, Johnson and Warren 2000; Bromley 1997; Green and Bigum 1998).

Bigum and Kenway (1998) have attempted to classify the way we can think about the use of digital technologies in schools. They have suggested principles upon which observers can conceptualise the use of these technologies, referring to dimensions: the ‘operational, cultural and critical’ (Bigum and Kenway 1998: 389, emphasis in the original). They use the phrase ‘operational dimension’ to refer both to the physical descriptions of digital technologies and associated equipment (computers, local and wide area networks, printers and modems for example) and to the skills required to use these pieces of equipment. The ‘cultural dimension’ to which they refer ‘involves stepping into the culture of using computers for educational purposes – no matter what one’s level of expertise or orientation’ (Bigum and Kenway 1998: 389). They suggest that immersing oneself in that culture will be of benefit to understanding how digital technologies can be used within schools. In undertaking a critical appraisal of the circumstances under which digital technologies and associated products are employed, Bigum and Kenway (1998) talk about ‘reading against the grain’ (Bigum
and Kenway 1998: 389). By this they mean ‘asking questions about the taken for granted assumptions that are embedded in the stories about computer technologies inside and outside of schools’ (Bigum and Kenway 1998: 389). In part, this is the task of this thesis: to use stories about advocating the use of digital technologies in Australian public schools, and to ask questions about some of the taken for granted assumptions embedded within those stories. The central concern in this thesis however, focuses on present public policies advocating the use of digital technologies in Australian government schools, and the implications of these for the meaning of public schooling in the 21st century.

**SITUATING THE RESEARCH SPACE**

Bourdieu’s (1975, 1977) concept of field has been applied to aid in situating the research space identified for this thesis. Bourdieu describes a field as a separate ‘social universe having its own laws of functioning’ (Johnson R. 1993: 14) and its own relations of force (Bourdieu 1993). It is a place of human endeavour where relationships operate within their own logic (Bourdieu and Wacquant 1992), and where the concept of the field brings with it the recognition that different structures and rules apply within that space. Bourdieu has identified education as a field (Bourdieu and Passeron 1977). There are however, many fields that can be identified (Drummond 1996) and Bourdieu has nominated several other fields including religion, science, the market in symbolic goods, the intersection between literature and power, philosophy and power, and the intellectual field (Nice 1977).

Bourdieu likens the forces in fields as similar to that of magnetic fields (Bourdieu 1977), or a place where there simultaneously is both conflict and competition, and a place where the participants battle over the capital effective within the field (Bourdieu and Wacquant 1992). That is, the structure of a field is ‘nothing other than the structure of the distribution of the capital of specific properties which governs success in the field’ (Bourdieu 1993: 30). Bourdieu defines ‘capital’ as the power that
individuals have within fields that provides them with access to the ‘specific profits that are at stake within the field’ (Bourdieu and Wacquant 1992: 97).

Bourdieu argues that within fields people participate in practices appropriate to that field. This is what Bourdieu refers to as ‘habitus’ or the ‘system of lasting and transposable dispositions which, integrating past experiences, functions at every moment as a matrix of perceptions, appreciations and actions and makes possible the achievement of infinitely diversified tasks’ (Bourdieu and Wacquant 1992: 18). Fields therefore have traditions (Jones 2001). Fields however, do not operate in isolation from each other and so while each field can be considered as relatively autonomous, there are nonetheless dynamic relationships with other fields.

**Describing The Fields**

Drawing on Bourdieu’s theory of field then, the following diagram demonstrates the fields and their points of potential overlap that have been considered pertinent to this study. These fields are public policies, public schooling including distance education, and the ill-defined industry sector which is labelled here as the ‘information and communication technologies (ICTs) industry sector’ (cf Australian Bureau of Statistics (ABS) 1999a)

*Diagram One: Situating the research space*
In this thesis, distance education has been brought into focus, rather than being subsumed within the field of school education. Here, distance education has been considered as a sub-field of the schooling sector, and while there are some commonalities it shares with the more general schooling sector, it also has some characteristics of its own. Diagram One is not intended to convey a view that the boundaries of each circle are impervious. Rather it is intended to provide a picture of where some of the boundary struggles can exist and to aid the reader to conceptualise the space in which the research for this thesis has been undertaken.

**Public Policies**

There are a variety of interpretations about what is to be understood by the words ‘public policy’, and what constitutes a public policy (Ball 1990, 1994; Bridgman and Davis 2000; Considine 1994; Prunty 1985; Taylor, S. 1997; Taylor, Rizvi, Lingard, and Henry 1997). Taylor et al (1997) define the public sector as those organisations and institutions that gain their authority from the State. They argue that ‘theoretically, at least, the public sector is based on the principle of equality of treatment of citizens’ (Taylor et al 1997: 2), and that the concept of the public sector is underpinned by the principle that public authority is to be used only in the public interest (Taylor et al 1997). They further assert that ‘the concept of ownership of enterprise and profit have been traditionally missing from the public sector’ (Taylor et al 1997: 2). Public policies then, can be considered as the official statements of public sector agencies intended for the citizens of the State.

A range of official documents are labelled as ‘policies’ including new government’s legislations and amendments to existing legislations; white papers; party political election platforms; government departments’ statements labelled as ‘public policies’; and departmental strategic planning documents. Public policies however can be considered as more than simply texts or official documents (Taylor et al 1997). Taylor, S. (1997) and Taylor et al (1997) draw on Codd (1988) to indicate that public policies can be considered as the authorised talk of the State.
Stephen Ball (1990, 1994) has argued that policies can be considered as both the text and the processes and discourses (used by Ball in the Foucauldian sense), that lead to the production of the policy text. That is, he argues that policies are always in a state of ‘becoming’ (Ball 1994). An understanding of public policies according to Stephen Ball then, can include the processes that lead up to fixing the meaning of the policies in time through the creation of the policy texts, as well as the policy texts themselves. Taking Ball’s lead, Reid (2000) has also argued that the key to understanding education policy ‘lies in the discourse through which that policy and the debates around it are framed and expressed’ (Reid 2000: 1).

Considine (1994) suggests that when governments make announcements of a public stance on contemporary issues that they are adopting a policy. He links statements of authority with the allocation of resources stating that ‘a public policy is an action which employs governmental authority to commit resources in support of a preferred value’ (Considine 1994: 3). Roe (1994) defines public policy broadly, covering macro level planning and decision making and other public sector interventions, and also includes ‘field projects, departmental programs, sectoral strategies, and bureaucratic reform’ (Roe 1994: 34). He argues that using this definition of policy makes ‘policy narratives … the armature of everyday life in government’ (Roe 1994: 34). Bridgman and Davis (2000) define ‘public policy’ as ‘a statement of government intent, and its implementation through the use of policy instruments’ (Bridgman and Davis 2000: 174). Here, ‘policy instruments’ is interpreted to include people, structures and things, including associated documents and budget papers that support the enactment of public policies.

Taylor et al (1997) define public education policies as those policies ‘made on behalf of the state by its various instrumentalities to steer the conduct of individuals such as teachers or students, and organisations, such as schools or universities’ (Taylor et al 1997: 1-2). They argue that public education policies outline the conditions under which schools are to operate, and argue
that such policies have two key functions: ‘to provide an account of those cultural norms which [are] considered by the state as desirable in education, and to institute a mechanism for accountability against which teacher and student performance [can] be measured’ (Taylor et al 1997: 2).

Drawing upon the arguments presented by authors such as Ball (1990, 1994), Taylor et al (1997) and Bridgman and Davis (2000) this thesis problematises views about ‘public policy’. In Chapter Two the question of ‘what are public policies?’ is further elaborated, and in Chapter Five, the ways in which public policies and their contexts are framed, and the nature of the problems and solutions presented in the policy texts, are debated.

Public Schooling
In Australia, the words ‘public schooling’ have changed their meaning over time but have included ‘notions of free education – at least to the age of compulsion – and equality of provision’ (Reid 1998: xi). Partridge (1973) states that an assumption of equality has underpinned the provision of public schooling since the establishment of the relevant Education Acts in the colonies, indicating that it has been considered the duty of governments to support the provision of public schooling to a minimum basic standard. Since the Second World War ‘public schooling’ has been considered as essential to Australia being a civil society (Cox 1998) and has therefore been seen as a public good (Reid 1998). Andrew Spaull (1998) has defined public school education as

any system of schooling, both here and overseas, that is regulated by a civil agency, supported primarily from public funds and which provides free schooling (at least in terms of tuition costs) for the compulsory years of schooling, if not beyond (Spaull 1998: 3).

In the Australian context, this definition of ‘public education’ rests on the provision of schooling being provided by governments, in buildings called ‘schools’, using public funds. That is, the provision of public schooling occurs in the public sector or state institutions on a non-market basis (Marginson 1998).
Marginson (1998) argues that definitions of ‘public education’ such as Spaull’s however, fit ‘with the long dominant liberal dualisms of public/private and state/market’ (Marginson 1998: 69). He argues that such definitions of public education have been associated with claims that public schools are places where a democratic education is provided. Marginson (1998) sees such claims as problematic stating that ‘the claim that state sector education is ipso facto more democratic [than private schools] has become deeply problematic because of shifts in the character of the government itself’ (Marginson 1998: 69). Marginson (1998) provides a definition of ‘public education’ that moves away from describing it on the basis of the location where the schooling process occurs, to one built upon democratic purposes of education. He states that his preferred notion of “public education” is that it contributes to open and democratic social relations; is tolerant and inclusive; respects difference; and is associated with egalitarian practices in which the mode of learning is solidaristic rather than competitive, and the education of one is advanced by the education of all to the highest possible level of achievement (Marginson 1998: 69).

In this thesis it is from both Spaull’s and Marginson’s interpretations that an understanding of ‘public education’ is gathered. Public education does occur in public or state-funded buildings. It is acknowledged too that ‘public education’ in Australia in the past has been considered synonymous with ‘democratic education’, and where schooling was freely available to ‘all comers’ (Connors 2000) no matter their current or previous financial, social or cultural status, gender, class positions or physical dispositions. That is, ‘public schooling’ has been understood as the provision of school education of a similar standard across schools, available to all citizens in that state or territory. Important for this thesis then is the history and tradition of public schooling being ‘free, compulsory and secular’. This thesis takes the view however, that Marginson’s proposal above, for the provision of a democratic education, is central to the future purposes of public schooling.
As such, the central question for this thesis concerns what public schooling means in Australia in the 21st century given our past tradition of free, compulsory and secular schooling, and the present policies urging the ubiquitous use of digital technologies.

With these interpretations and the question for the thesis in mind, it is useful to pause here to briefly outline the demographics of the Australian community for whom the field of public schooling is pertinent. In order to contextualise the demographic information that will be provided shortly, the following extract from the MCEETYA-commissioned report Real time: computers, change and schooling, and published in part as a special article for the ABS, is provided. This article indicates that disparities in students’ IT [information technology] skills [occurs] according to school type, size, sector, location and income area, and according to students’ sex, cultural background and ethnicity. Indigenous students and students from small schools, especially in rural and isolated areas, are the most likely to lack basic skills. … School location, sector and socio-economic background are closely linked to the presence of computers and computer-related technologies in students’ homes, to patterns of use and to the age when students first use computers, both at school and elsewhere. The higher the average family income of the area where students go to school and the greater the population density, the more likely students are to have acquired IT [information technology] skills at home, to use them more frequently and to have started earlier than others. Students from independent schools, and schools in urban areas and high income areas are most likely to use computers outside school, most likely to use them frequently and most likely to enjoy using them (ABS 2000a: 4-5).

With this information in mind then, some of the demographics of Australian society that impinge upon decisions about the provision of public schooling, are outlined.
In August 2000 there were 3.2 million full-time school students in Australia; 2.248 million attending government schools and 999,138 attending non-government schools (ABS 2001a). The total number of schools (at August 2000) was 9,595 of which 73% or 6,961 were government schools and 27% or 2,634 were non-government schools (ABS 2001a). In 1997 there were 145,536 full-time equivalent (FTE) teachers in the government sector (ABS 1998) whose average age was 46 (Parliament of Australia 1998). In 2000 the number of FTE teaching staff in government schools had increased to 150,610 and in the non-government sector there was 67,440 FTE teaching staff (ABS 2001a). Looking to the future, over the next ten to twenty years, the majority of the current teaching force will have retired and new teachers will be in their place (Parliament of Australia 1998). Children born in the year 2001 are likely to begin school in 2006 at the age of five. They will probably complete their secondary education in 2018, and of those attending university, they are likely to complete a three or four-year degree in the year 2022 and in the years beyond.

The provision of public schooling is affected by the number and location of Australia’s population, and by the physical geography of Australia. The demographics of the population impinge upon decisions about where to locate public school buildings, and where to send teachers. In some communities in Australia, the digital technologies facilities available in the school are the most sophisticated in the vicinity. In such communities the school can be the only place or be one of only a few places where people undertake paid employment.

Australia’s population is concentrated in two widely separated coastal regions with more than 60% of the population located in Australia’s capital cities and a further 10% located in urban regions of over 100,000 people (MCEETYA 1999c: 1). Half the area of the continent accommodates only 0.3% of the population, and the most densely populated 1% of Australia contains 84% of the population. In addition, the Australian population is
mobile, with 43% of Australians moving house between the censuses of 1991 and 1996 (Bell and Hugo 2000).

The families of school aged students in Australia comprise people from many cultures and religions. At the 1996 Census of the total population, 3.9 million people had been born overseas in one of over 200 countries. A further 3.8 million had one or both parents born overseas. There were 2.6 million people who spoke a language other than English at home. The 1996 Census classified 92 religious denominations as well as 282 major languages, including 170 Aboriginal and Torres Strait Islander languages (ABS 1999b: 1).

To govern this diverse and dispersed population, Australia has a commonwealth government and within the Commonwealth of Australia there are six states and two territories, each with their respective governments. This thesis focuses upon public schooling in Australia provided by these nine governments.

It can be seen from this demographic information drawn from the ABS and from the MCEETYA-commissioned report Real time: computers, change and schooling (Meredyth, Russell, Blackwood, Thomas, Wise 1999), that at the very least there exists the potential for disparities in students’ access and therefore use of digital technologies. This raises the importance of schools in providing a public infrastructure to provide access to and use of digital technologies. This then returns us to the central question identified for this thesis: ‘what does public schooling mean in Australia in the 21st century, with its past tradition of free, compulsory and secular schooling, and given the present public schooling sector policies are urging the ubiquitous use of digital technologies?’

Distance education
Where students of compulsory age are unable to attend school, special dispensation from normal school attendance is required to be enrolled at a distance education school. These students undertake instruction consistent
with the departmental regulations of the state or territory. Most students undertaking distance education receive instruction from a teacher located in a school of distance education or a school of the air, and are supervised by a parent, volunteer supervisor or paid home tutor. All states and the Northern Territory provide distance education systemically. That is, it is organised centrally at a whole of state or territory level.

Students can enrol in distance education in accordance with their respective state or territory rules concerning such enrolment. In general, students enrol in distance education for one or more of the following reasons. They are

- geographically located too far away from their local school to make it possible to attend on a daily basis;
- unable to attend their local school due to medical reasons including pregnancy;
- of compulsory school age and have been suspended or expelled from their local school, or are spending some time in prison;
- itinerant due to the student’s family circumstances (for example, the family is a member of a circus troupe);
- itinerant due to the student’s own circumstances (for example, the student is an elite athlete or artist); or
- requiring curriculum offerings that are not offered in the local school (cf Charters Towers 2001; DETE (South Australia) 1999a; Tasmanian Open Learning Service (TOLS) 1999; Schools of Isolated and Distance Education (SIDE) (Western Australia) 2000). Australian students also are able to enrol in distance education if they are travelling or located overseas for a period of time. Some students are enrolled in distance education due to the religious or other beliefs of their families, and therefore wish to undertake schooling at home. Some families who are geographically isolated send their children to boarding school, but for others this is not a preferred method of schooling, nor for some an affordable one.

Some families chose to school their children at home outside of the public provision of distance education. Like the requirements for qualifying to
undertake schooling through distance education, special dispensation from normal school attendance is required (cf Australian Capital Territory Department of Education and Community Services (DECS) 2000a; Education Department of Western Australia (EDWA) 1999a; Education Queensland 1998). The Report of the Ministerial Working Party in Victoria undertaking the review, Public Education: The Next Generation, noted a growing tendency towards home schooling stating that ‘some parents seek exemptions from schooling in favour of teaching their children at home, and this practice could grow’ (State of Victoria 2000a: 17). In South Australia, the local daily newspaper, The Advertiser carried the front page headline stating, ‘ruling clears the way for school at home’ (Heggen 2001: 1). The article that followed indicated that the headline was pre-emptive of proposed changes to go before Parliament in relation to the Education Act. The reported amendment to be put forward provided recognition for home schooling to be undertaken as a legitimate form of education. Apple (2001) reports that home schooling is a growing trend in the United States of America.

Alongside the increasing interest in private home schooling and consistent with trends overseas for the provision of public schooling online (cf Concord Consortium 2000; Florida Online High School 2000), there has been an emergence in Australia of private online tutorial services such as worldschool.com. This particular venture has now become a partnership with the Curriculum Corporation managing some parts of the enterprise (cf worldschool.com.au 2001). Nonetheless the emergence of such initiatives indicates that competitors to public school level distance education provision can and are emerging. The reach of these companies is still somewhat limited in Australia, but it provides an indication of the directions in which schooling is pointed. It will be argued in Chapter Five that these developments are consistent with an emphasis on freedom of choice in the school education marketplace (cf Kenway 1995, 1998; Reid 2000; Seddon and Marginson 2001).
Enrolments in distance education delivery of school education in Australia are difficult to determine. While the ABS collects school enrolment information which includes distance education students, it does not collect separately, nor does it disaggregate specific information about distance education students. There are a number of reasons for this including the following:

- school education systems have not identified the necessity to gather nationally consistent enrolment data for distance education delivery;
- students can be transient and enrol and withdraw more frequently than their counterparts in ‘face-to-face’ schools, making the statistics transient in themselves and difficult to gather;
- students may not be enrolled on a full-time equivalent basis, but enrolled in one or a couple of subjects only;
- there are no nationally, commonly agreed terms which define or describe the nature of the data collection for school distance education; and
- linked to this, there are no commonly agreed times of the year or agreed mechanisms for collecting enrolment data from across the states and territories in order to aggregate nationally that enrolment data about distance education (Moyle 1999).

Those working in the respective state or territory schools of distance education then, have an understanding of the extent of the provision of distance education in that state or territory, however beyond that there are few formal mechanisms for being able to judge its extent.

Using digital technologies in Australian public schooling

Around Australia, public schools are encouraged to use digital technologies in their daily work. Broadly and briefly, digital technologies are being used in these schools in several ways, including the following:

- incorporating digital technologies as part of classroom practice in ‘face to face’ schools (reception to year 12) both as an area of curriculum content in itself (for example the development of computer skills) and as
a teaching and learning methodology (for example, teaching students how to use the Internet as a research tool);

• linking specific skill training and formal vocational qualifications with senior secondary state and territory accredited qualifications, and within the states and territories respective benchmarking strategies;

• using digital technologies as a communication tool to overcome barriers of demographics and geography such as how it is used in distance education;

• supporting teacher professional development activities, (for example, through the use of online forums);

• using digital technologies as part of the work of the library both as an administrative tool for librarians and for reference and research use by students;

• underpinning the daily administrative work of the school, (for example, maintaining school records such as financial records, timetables, and attendance rolls across a school);

• supporting individual teacher’s work whether that is curriculum development, classroom planning, student assessment and reporting, administrative responsibilities and time management requirements, or communication between staff, students and parents across the school community; and

• providing information to the interested public and to school staff through the use of websites and portals.

Education Queensland (the Department of Education in Queensland), has summarised its advocacy for employing digital technologies this way: ‘the use of ICT [information and communication technologies] is essential for the effective delivery of all elements of the education process – curriculum; teaching and learning; and administration’ (Education Queensland 1999a: 2). While the categories of ‘curriculum’, ‘teaching and learning’ and ‘administration’ broadly summarise the various uses to which digital technologies can be deployed in schools, it leaves out some uses made of digital technologies which are not easily included by these labels, such as professional development of teachers and the provision of digital
information to the general public. This study has been interested in the full range of activities for which policies advocate the use of digital technologies in schools, and it is against this backdrop of the provision of public schooling that the policies advocating the widespread use of digital technologies are considered.

**Information And Communication Technologies Industry Sector**

Defining the ‘information and communication technologies (ICTs) industry sector’ is problematic. This is one of the difficulties in describing the research space for this thesis. It will be seen that while the schooling sector policies directly link their policies to economic policies, there are debates about the use of the terms and language used within and about the sector, the extent of the sector as an industry, and whether the sector constitutes a separate economy of its own.

The development of a commonly shared language of terms and phrases (to use an Internet metaphor), appear to be ‘under construction’. Dialogue between those working in the sector often includes questions of clarification about the meanings of words and phrases being used by each other in order to establish shared meanings, albeit that these tend to be ephemeral (cf Moyle 1999-2000).

The ABS (2001b) has defined the ICTs sector within Australia as including telecommunications services, computer services and selected manufacturing and wholesale trade industries. This sector however, does not include radio and television services, although in some countries these services are included in this sector (cf ABS 1999a, 1999b). According to the Australian and New Zealand Standard Industrial Classification (ANZSIC), the communications services industries cover telecommunication services, postal and courier services (ABS 1999c).

The PMSEIC (2000) has recognised that defining the ICTs industry sector is problematic, stating that
the boundaries of what constitutes the information and communications industries are not clear cut because there is a convergence in the use of information and communications technologies in an increasing range of products and services. Some analysts include the content industries delivered by ICT as part of the industry (PMSEIC 2000: ii).

‘Content industries’ using digital technologies within the schooling sector were described in the report Delivering the Promise (Trinitas 2000), which was prepared as a cabinet submission to the 1998-2001 federal government. It describes the ‘digital curriculum resources market’ (Trinitas 2000: 16), as ‘the market for digital content and tools’ (Trinitas 2000: 16). It notes that ‘no ANZIC code applies to this market, however its activities span those referenced in the book publishing, communications, information and computing services industry’ (Trinitas 2000: 17). It also states that ‘the very small market in digital curriculum resources that currently exists is very immature and fragmented’ (Trinitas 2000: ix). The nature of the ICT industry sector, its relationship to a ‘digital content industry’ and the provision of public schooling then, can have different meanings to different people in different contexts.

According to the ABS, the ICTs industry sector can be considered to belong to the ‘information society’ and to operate within the ‘information economy’. The ABS Year Book Australia 1999 states that

the term ‘information society’ is mainly used to refer to the diffusion of these [digital] technologies throughout the community (business, government and households), and the term ‘information economy’ relates to the flow of information between economic units, the transactions that take place, and the benefits resulting from these transactions and information flows (ABS 1999d: 587).

Lamberton observes however, that online economic activity tends to be constructed as a separate economy. He argues against this view though, stating that it is not a separate economy because like the rest of the
economy, it is ‘built upon the labour force, the knowledge base, public assets, and the legal framework and other institutions of society’ (Lamberton 2000: 3). Furthermore, he argues that while ‘economic theory assumes decisions makers have rich and sure information’ (Lamberton 2000: 2), that ‘we lack official statistics of information work and activities and especially of the international flow of information’ (Lamberton 2000: 2). He states ‘it should be an important clue that most of the disputed areas in economic theory and most of the major discontents are tied up with the assumptions made about the role of information’ (Lamberton 2000: 3). As such, suffice to note here that while the ‘information economy’ is portrayed as a separate economy, the extent of the ICT sector as an industry, and the dilemmas about whether the sector operates within a separate economy of its own, makes defining this field problematic. The relationship between the ICT industry sector and the schooling sector then, is not as clearly definable in theory as the policy texts portray.

This brief outline of the ‘information and communication technologies industry sector’ demonstrates there are difficulties defining it, and it could be that this is contributing to difficulties in developing common understandings of the definitions of what may constitute such a sector, which seems to be in the process of specifying itself. Linking the ‘information economy’ to schooling sector policies occurs within the policy documents and given the complexities outlined, the nature of this study then, is also complex. Within the ICT industry sector and running across each of the fields impinging on the research for this study is the use of digital technologies. These are considered in this thesis as social constructions rather than as neutral or arbitrary in their construction, as the following discussion will demonstrate.

Viewing digital technologies within the ICT sector and across the fields
Information is digital when it has been converted into binary numbers. It can then be referred to as digital information. ‘Using this binary code of computers, information and communications become digital ones and zeros’
(Tapscott 1996: 6). In computer terminology each ‘one’ or ‘zero’ is called a ‘bit’. Once information is converted into bits it can be entered into computers and stored there as long strings of bits (Gates 1995). Computers produce digital signals for data transmission. This means that there is no relationship between the information’s digital form and its non-digital meaning (Chesher 1997). As Castells (2001) informs us, ‘once programmed, information networks, powered by information technology, impose their structural logic on their human components’ (Castells 2001: 167). It is important to remember though, that this structuring is achieved through computer programming which is a human activity over which humans have control. It is not an automated technological activity devoid of human interest.

Wyatt, Henwood, Miller and Senker (2000) argue that digital technologies can be viewed as ‘the material embodiment of the values and interests of particular social groups or classes’ (Wyatt et al 2000: 11). Consistent with this, the use of digital technologies in public schooling is considered here as the outcome of negotiation between individuals, groups and institutions, where the cultural meanings of technologies are seen in the language and in the ‘symbolic universes’ that are created through the use of the technologies by people (Wyatt et al 2000). Wyatt et al (2000) identify that technologies are designed and built by people who have their own socially constructed views about what is ‘good’ or preferable in certain circumstances. That is, there is not an ultimate truth about how technologies are to be constructed or used. Wyatt et al (2000) illustrate their intentions of the use of the phrase ‘values and interests’ by drawing on the example of a design for a car. The most common design for a car presupposes a nuclear family, thereby reflecting the views or the values and interests of the designers (Wyatt et al 2000). In this case, these values and interests are influenced by what is considered the most saleable design for a car. Assumptions that underpin the development of technologies including digital technologies therefore are informed by values and interests rather than by immutable truths.
Acknowledging that digital technologies are problematic social constructions then, shows that each piece of technology, its purpose and function can be viewed both separately and in combined formats, when contemplating their application within ‘face to face’ schooling and distance education. In this way it is possible to determine what values and interests are being served through the hardware, software or service. For example, as all digital coding is composed of the same material (that is ones and zeros), each piece of coding can be easily exchanged or reconfigured. Since the digital information required for software programming theoretically can be reconfigured, the capacity to use open source code as a way of furthering Marginson’s (1998) earlier definition of democratic schooling in the public schooling sector, has been considered worthy of exploration. This is undertaken in Chapter Six.

INTRODUCING THE RESEARCH SPACE

Australia’s public schools receive policies advocating the widespread or ubiquitous use of digital technologies and are required to interpret and explain their implications for the students for whom they are intended to benefit. A research approach that recognises the diversity of perspectives impinging on schools, and that recognises the absence of ‘rich and sure data’ (Lamberton 2000), has been sought. It is argued throughout this thesis that the advocacy for using digital technologies in schooling through Australian state, territory, national and commonwealth policies, is socially shaped, a social and interpretative approach to the research has been adopted using narrative theory (cf Carr 1986; Clegg 1993; Gadamer 1975; Herda 1999; MacIntyre 1985; Mumby 1993; Packer and Addison 1989; Polkinghorne 1988; Ricoeur 1984, 1985, 1986, 1988), coupled with the concept of hegemony (Gramsci 1971). Briefly, narrative theory uses the stories people tell to interpret meanings of social reality (cf Polkinghorne 1988). Hegemony is understood as the predominance of one group of people over others, achieved through their consent, and maintained through the commonsense or normal reality of those subordinated in the hegemonic relationships (Williams, Raymond 1976). Hegemony then, has been used
with narrative theory to interpret, understand and explain public schooling sector policies. The theories and the methods of this research are outlined in detail in Chapters Two and Three.

While it is recognised that there can be tensions between Gramsci’s work on hegemony, ideology and interpretative methodologies, it is argued that policy development and implementation are sites of struggle, where the theoretical approaches adopted can contribute to the understandings and explanations developed. Narrative theory and Gramsci’s concept of hegemony are used in this thesis because they allow for the opportunity to listen to and interpret the stories people, organisations and texts tell. Narrative theory is helpful for being able to describe and construct relationships between people, and between people and things. The theory of hegemony has been employed to aid in the interpretation of these relations. The concept of hegemony therefore has been used in this thesis alongside of narrative theory so that the words of the policies counting as ‘official knowledge’ (Apple 1993) are not accepted blindly. This too, is to act on Apple’s (1994) warning to ground our theorising in the realities of everyday life. As such, stories have been used as a method to observe the influences of the institutional and hegemonic operations of policies.

and Painter 1997; Mintzberg 1994; Sharratt and Field 1993; Stryhe 2000) has been employed in conjunction with the policy research used.

The following diagram illustrates how the research space has been conceptualised. As is the case for Diagram One, the boundaries are not intended to be impervious. The diagram is intended to be illustrative only and is presented to aid in conceptualising the nature of the research study undertaken.

![Diagram Two: Conceptualising the research space](image)

It could be argued that this is to take a post-modern approach to the research (cf Baudrillard 1989; Lyotard 1984; Rosenau 1992; Usher and Edwards 1994), since post-modernism rejects universal systems of thought (Lyotard 1984) and recognises multiple readings of reality, where the social constructions of reality are viewed as problematic, rather than as unchangeable objects. Post-modernism challenges modernist epistemology, which is based upon an unambiguous distinction between the subject and the object (Lechte 1994). Claims to objective knowledge and authority are challenged (Usher and Edwards 1994). Literal models of truth and knowledge are replaced by figural representations (Denzin and Lincoln
The breadth and depth of what constitutes post-modern theories however, is controversial (Green, A. 1994; Usher and Edwards 1994), and as Kenway et al (1994) point out, as a label for defining activities, post-modernism is ‘a highly contentious and contested term’ (Kenway et al 1994: 320). They further suggest that post-modernity has emerged from or ‘feeds off’ modernity, ‘rather than dramatically breaking with modernity’ (Kenway et al 1994: 321). Apple (1994) takes a similar tack to Kenway et al (1994), suggesting that

going too far in this direction [referring to post-modernism and post-structuralism] may lead us to underestimate the realities of economic and political power, of the gritty materiality of class dynamics and the material conditions people experience in their daily lives (Apple 1994: xi).

The point of convergence with drawing upon the different theoretical approaches outlined for application in this thesis is the use of language and discourse. Here language is considered as both a code that allows humans to communicate with each other, and as the processes of using accepted codes of language exercised through acts of discourse (oral, written or symbolic), which are used for communicating. Language however, is viewed not so much as a formation which stands outside the world but as a practical and structured way in which human beings interact with each other in the world, and where discourse is defined as ‘the level of acts of language equal to or greater than a sentence’ (Ricoeur 1984: ix). Furthermore, this study has drawn upon artefacts and processes used for the purpose of communication. Here ‘communication’ refers to ‘the institutions and forms in which ideas, information, and attitudes are transmitted and received, … the process of transmission and reception’ (Williams, Raymond 1962/1971: 17). It is recognised though that interpretations of the words ‘language’ and ‘discourse’ can be contentious and are dependent upon the context within
which the terms are used. Therefore, care has been taken throughout this thesis to ensure clarity of intention. Together though, language and discourse constitute narratives where ‘a story is the linguistic unit that can ultimately fix the affective meaning of the events that compose it’ (Egan 1989: 101). In this way then, stories are like policies: both are formed through processes that when fixed in time become products.

**WHAT THIS THESIS AIMS TO DO**

The central question for this thesis then is ‘what does public schooling mean in Australia in the 21st century, with its past tradition of free, compulsory and secular schooling, and given the present public schooling sector policies are urging the ubiquitous use of digital technologies?’ In addressing this question the thesis aims to contribute to the development of a stock of Australian research based within and pertinent to the public schooling sector.

To undertake research of this nature, it is argued, requires a multi-layered approach drawing upon different fields and perhaps challenging existing boundaries of those fields. Since narratives or stories are fundamental to people’s lives (cf Bruner, J. 1991; MacIntyre 1985; White 1981) these have formed an important part of this study. Narratives are one of the ways we make meaning of the world around us (Polkinghorne 1988), and it is through the use of language and by engaging in discourse with others that we can understand our social reality. These views have led to considerations in this thesis, of the constitution of hegemony (Gramsci 1971) through the use of language. It will be argued that through the use of narratives people can make meaning from their lived experiences, from the consequences of their actions, and from the stories of their projected futures. Further, it will be seen that stories can provide legitimacy and consent to hegemonic situations, and conversely they can be used to frame counter hegemonic scenarios for the future. To help us consider the question for this thesis then, a more detailed debate about the theoretical basis for the thesis now follows.
CHAPTER TWO

THEORETICAL INFLUENCES ON THE RESEARCH

This chapter describes the theoretical concepts underpinning this thesis by outlining in the first section what is understood by ‘interpretative research’, and explaining why positivist approaches in this particular study have been rejected. Narrative theory and its use in the research of school education policies, and the characteristics of public policy are debated here. The second section in this chapter outlines what is understood by hegemony and its implications for the provision of schooling. The use of language and discourse to construct hegemonic relationships is debated, and the chapter concludes with a discussion about using narrative theory with hegemony. With this theoretical backdrop, this chapter informs the next chapter which outlines the specific research methods used in this study.

INTERPRETATIVE RESEARCH

In order to determine what public schooling means in Australia in the 21st century with its past tradition of free, compulsory and secular schooling, and the present policies urging the ubiquitous use of digital technologies, an interpretative study has been undertaken. It will be seen that such a theoretical approach assists in determining meanings in texts and actions, and therefore aids in interpreting public schooling policies. Such an approach however has seen positivist research approaches rejected for use in this study.

Rejecting Positivist Research Approaches

Positivist research is premised on the view that the methods of the physical sciences can be applied to questions of social science (Thompson, J. 1981; Usher R. 1996). Saint-Simon and his secretary, Comte, initiated such a view in the nineteenth century, giving rise to sociology as a discipline (Berger and Berger 1976; Berger and Luckmann 1979; Scruton 1982). Closely
associated with this version of positivism is logical positivism which emerged from the ‘Vienna circle’ in the early twentieth century (Scruton 1982; Thompson, J. 1981). It is based on the premise that only statements that are verifiable are meaningful (Bruner J. 1986; Scruton 1982; Thompson, J. 1981). During the twentieth century the field of school education has drawn upon the related disciplines of sociology, psychology, and the natural sciences (Sirotnik 1998). This has been in an attempt to establish ‘education’ as a legitimate discipline, grounded upon a scientific base (Giroux 1981). Educational research therefore has tended to be dominated by those using research approaches underpinned by positivist rationality drawn from these related disciplines (Giroux 1981).

As rationality and instrumental reasoning have accompanied positivism in educational research (Bottomore 1975; Usher R. 1996), some of this research has become firmly entrenched within a tradition that has ‘defined progress as technological growth and learning as the mastery of skills’ (Giroux 1981: 5). This has been characterised by emphases in education research on quantitative and behaviourist approaches using experimentation, control and measurement (Herda 1999). Such approaches in education research have sought to deal rationally with facts, and to give prominence to questions of validity, reliability and replicability (cf Cronbach 1978; Glaser and Nitko 1971; Mortimore 1998).

Research of technological matters, where ‘technology’ can be considered to be ‘any practical application of scientific methods … the science of means’ (Scruton 1982: 459), also has tended towards the use of positivist research approaches (Hakken 1999). Furthermore, Knight, Smith and Sachs (1990) have argued that policies ‘appropriate scientific methodologies and social science theory in order to create a reality that is rational, objective, seamless, and which taps into sensibilities of national popular consciousness’ (Knight, Smith and Sachs 1990: 133). Consistent with this, some policy research has taken a positivist approach where economic markets have been seen as the place for instrumentalist policy discussions.
and where rational, individual choice in the marketplace is taken as the basis for social and political achievements (Considine 1994).

One of the problems of using positivist research approaches to consider the policies advocating the use of digital technologies in school education however, is the complexity of variables that can be identified and would require control in order that each of these variables could be measured. In addition, it was noted in Chapter One that there is an absence of some specific official statistical data that could be useful to this study. A positivist approach for this thesis then, has been considered impractical as the extent of the variables to control or vary would be too unwieldy to manage in a study such as this.

Furthermore, Rob White (1994) has noted that government funded research has tended to ‘favour empirical studies which do not involve more abstract theoretical analysis’ (White, R. 1994: 81). Blackmore, Gough and Green (1994a) concur with this view, noting that positivist forms of education research have been linked into respective governments’ frameworks of accountability. This study has not aimed to prepare a government report but to prepare an academically robust thesis.

Positivist research then, tends to be used where judgements are required about things that can be controlled and measured. It has been determined that positivist research approaches are not appropriate for this study as it would require the identification of variables that could be very difficult, if not impossible to consistently define, control and measure. In addition, reducing meanings to behaviours (Herda 1999) where the assumption is made that positivist approaches to research are value-free (Thompson, J. 1981) have not been considered useful here. Rather schooling is viewed as a social and cultural activity where histories and traditions from the past influence the present and the future, and where contradictions are recognised to exist. It is argued instead, that the nature of the research question for this thesis is better served through using social and
interpretative approaches in conjunction with hegemony. Positivist research methods therefore have been rejected. While some research in the fields pertinent to this thesis (public policy, public schooling including distance education, and the ICTs industry sector), have lent towards the use of positivist, determinist and rationalist approaches (Considine 1988, 1994; Dudley and Vidovich 1995; Giroux 1981; Hakken 1999; Styhre 2000; Taylor et al 1997), within the research space identified for this thesis such approaches have not been used. Instead interpretative research has been undertaken, in conjunction with the concept of hegemony (Gramsci 1971).

Theory Of Interpretation
The concept of interpretation can be understood in different ways and so here it is described as ‘the work of thought which consists in deciphering the hidden meaning in the apparent meaning, in unfolding the levels of meaning implied in the literal meaning’ (Ricoeur 1974: 13). Interpretative research assumes that our knowledge of reality is achieved through constructions such as language, discourse and stories, that allow for the development of shared meanings (Klein and Myers 1999). Interpretative research focuses upon the complexities of human meaning making. It attempts to understand events, circumstances and things through the meanings that people ascribe: where ‘knowledge is concerned not with generalisation, prediction and control but with interpretation, meaning and illumination’ (Usher R. 1996: 18). While positivists focus upon seeking truths through proving the laws of the world, interpretative research is interested in the meanings that people place upon their world, through, for example, the use of narratives and therefore through the use of language and discourse: oral, written and symbolic. Interpretative approaches then, bind together the perspectives generated from the context, the researcher and the participants in the research.

Ricoeur (1988b, 1991) has developed a general theory of interpretation where the aim is to combine ‘understanding and explanation into a dialectical model of textual interpretation’ (Klemm 1983: 90). Ricoeur does
this by making the following two assumptions: firstly that meaningful action is the object for research in the human sciences, and secondly that interpretative discourse on those actions is possible. Ricoeur links interpretation to the concept of a text and a theory of reading (Thompson, J. 1981). He sees a theory of reading concurring with an approach to narrative development. This he argues consists of a process of pre-figuration, configuration and refiguration (Ricoeur 1984). He argues that a theory of reading should include the authorial strategy, the inclusion of this strategy within the text, and the response by the reader. Such a theory he argues, can then operate as a metaphor for all action (Ricoeur 1977), where the author, the reader and the actions that join them, is a spiral of sense-making (Jones 2001). In other words, through such a spiral of sense-making, people are able to determine meanings of texts and actions. As such, Ricoeur (1988a) considers that action may be regarded metaphorically as text, where the paradigm of reading is the counterpart of the paradigm of writing. He has described his own theoretical development as a progression to the ‘gradual reinscription of the theory of texts within the theory of action’ (Ricoeur 1991: xiv). It is the spiral of sense-making and the viewing of actions metaphorically as texts that can be read, that have been of theoretical use in this study.

**Interpreting Meaning**

Texts and actions can generate or call for different interpretations but these interpretations are not necessarily all of equal standing. Ricoeur has recognised this stating that actions can be interpreted in different ways: ‘it is always possible to argue for or against an interpretation, to confront interpretations, to arbitrate between them and to seek agreement’ (Ricoeur 1976: 79). According to Ricoeur (1988a) then, it is through the process of discussion and debate that some interpretations of meaning are maintained and others are discarded. He asserts that the process of interpreting meaning involves a movement between interpretation, understanding and explanation (Jones 2001), positing that understanding ‘is not concerned with grasping a fact but with apprehending a possibility of being’ (Ricoeur 1988b: 56).
Ricoeur does not reduce explanation to a structural analysis however (Thompson, J. 1981), but does suggest that the act of interpretation is mediated through a structural analysis (Thompson, J. 1981). Ricoeur (1976) states that structural analyses are but one necessary stage between ‘a naïve interpretation and a critical one, between surface interpretation and a depth interpretation’ (Ricoeur 1976: 87). He continues by stating that ‘explanation and understanding [are] at two different stages of a unique hermeneutical arc’ (Ricoeur 1976: 87). The accumulation of interpretations according to Ricoeur then, occurs through the use of increasingly sophisticated explanations. This approach is used in Chapter Five where interpretations of the past are used to inform understandings of the present policy texts, and where there is a cyclic movement of interpretation, moving from the naïve or surface interpretations to interpretations and explanations at more depth.

**Objectivity, Subjectivity And Temporal Context In Interpretative Research**

It is asserted that it is through language that we are all constituted, and here, to draw on Humboldt (Humboldt 1836/1999), language is viewed not only as a tool for communication, but it is also taken to reflect the worldview of the speaker or author. Central to interpretative research approaches are conceptions about the objectivity of the research, the subjective role of the researcher, and the temporal context of the study, each of which contributes to the nature of the research. It is on these matters that interpretative and positivist research approaches differ with each other.

**Objectivity and subjectivity**

A reliance on objectivity is one of the central tenets of positivism. This is to understand that the physical world is assumed to exist independently of human interests. Basil Bernstein (1983) has defined objectivity as

the basic conviction that there is or must be some permanent, ahistorical matrix or framework to which we can ultimately appeal in determining the nature of rationality, knowledge, truth reality, goodness, or rightness (Bernstein, B. 1983: 8).
Research from this view is seen to be objective because personal values are not considered to be impinging on the research undertaking. As such, objectivity in positivist research makes claims to a lack of bias and to the value of neutrality, where facts are generated and laws are determined or applied (Lindlof 1995; Usher R. 1996). It is through notions of objectivity that claims of ‘truthfulness’ in positivist research are made (Bernstein, B. 1983; May 1997; Usher, R. 1996). To undertake objective research in the positivist tradition deliberately places an artificial distance between the researcher and the objects being researched. It is argued that this is in order to eliminate or at least minimise the influence of the researcher on what is being researched (Kvale 1996). Positivist research facilitates the generation of generalisations from which, it is asserted, predictions can be made (May 1997; Thompson, J. 1981). It is an unreflexive research approach however, since it fails to ask questions about itself (Usher, R. 1996).

Interpretative research focuses upon the meanings people give to the texts and actions occurring around them. That is, the subjectivity of interpretative research recognises that the meanings people give to their situations and experiences, can be learnt through the interpretations given to such circumstances. These interpretations can be gained through professional conversations such as those conducted in this study and outlined in the following chapter, for example. It is accepted in interpretative research that subjects, researchers or knowers (Usher, P. 1996), cannot be separated from the objects of knowledge, or the ‘objective world’; they cannot be removed from their subjectivity. That is, the researchers’ values and beliefs are inherent in, rather than removed from, the research undertaking (Usher, R. 1996). The role of the researcher in this study therefore, is discussed in Chapter Three.

Weedon (1987) argues that language and discourse are implicated in the construction of subjectivity stating that ‘subjectivity is produced in a whole range of discursive practices – economic, social and political – the meanings of which are a constant site of struggle over power’ (Weedon 1987: 21).
Similarly, Mouffe (1983) suggests that subjectivity is in a constant state of ebb and flow that is created and recreated according to the social relations of a given moment and as a result of the subject’s relation within them. Further, Laclau with Mouffe (1982) have explained that ‘each individual as participant in a series of different social relations is therefore the locus of a plurality of determinations to which corresponding subject positions are constructed through discourses and practices with their corresponding interests’ (Laclau and Mouffe 1982: 108). In addition, MacIntyre (1985) argues that consideration of the intention of a person or a group cannot occur except in relation to the context within which the intention is formed. The recognition of the situatedness of any interpretative research undertaking (including this one) therefore is important. As a result, there has been an emphasis in this thesis on the concept of intersubjectivity, where there can be the joint constructions of understandings about the research undertaking. This requires the researcher to establish empathetic and respectful relationships with the participants in the research (Usher, P. 1996), and to acknowledge the contexts within which the research undertaking is conducted. Furthermore, such an approach allows for the fostering of reflection in the approach to the research. It is recognised that ‘reflection’ in research has a complex array of meanings, but here it is understood as signifying inward deep thought.

Rejecting binary distinctions
To make a binary distinction between objective and subjective research has not been an aim of this thesis. There has been wariness in this study of such distinctions. That is, while this thesis has rejected modernist unambiguous distinctions between the subject and the object, an unduly heavy emphasis on the subjective has also been avoided. The motivation for this approach has been in a similar vein to that articulated by Lingard (1993a) concerning post-structuralism. He has stated that while such theories provide us with a potentially better purchase upon understanding the complexities of contemporary societies, there is, however, also a
danger of such theorising leading back to pluralism, towards relativism and possibly political nihilism (Lingard 1993a: 28).

To avoid these dangers, Bourdieu (1977), Bourdieu and Wacquant (1992), Carr (1986), MacIntyre (1985) and Ricoeur (1984) have been informative for this study, as they have avoided making binary distinctions between the objective and the subjective. These authors argue that research can involve the use of objects (such as policy texts) and the subjective (such as the experiences leading to the fixing of those texts), which together can lead to the development of interpretations about these. Binary distinctions made from either modernist or post-modernist perspectives then, have been avoided.

Temporal context
The concept of time in narratives is considered important in order to understand and contextualise stories. This allows for meanings to be allocated and for actions to be interpreted. Interpretative research takes the concept of time and its passage as important and universal in our lives. This has been of particular interest to Paul Ricoeur (1984, 1986, 1988a), who in his three volume work *Time and narrative*, uses temporality as a mechanism of bringing together literary and philosophical questions about narratives (cf Ricoeur 1991). Other theorists too have addressed the importance of time to narrative theory including Carr (1986) and MacIntyre (1985). Learning to read the meanings of actions occurring in certain places facilitates with time, an interpretation of the narratives. A cohering feature of time, which constitutes our reasons for action, is the temporal concept of the past, the present and the future (Carr 1986). These concepts have been used to structure Part Two of this thesis.

A critical lens
Some interpretative theorising used in this study has included work that has used a critical approach focusing upon ideology critique (cf Herda 1999; Thompson, J. 1981; Usher R. 1996), where critique is considered to be more than simply ‘oppositional thinking’ (Fraser 1989). Wexler (1982) defines
‘critique’ as an ‘intellectual struggle against the displacement of history and social relations into either transcendent or naturalized representations as “knowledge”’ (Wexler 1982: 53). Critical theory is usually associated with the work of Adorno, Horkheimer and most strongly with Habermas, of the Frankfurt School (Scruton 1982; May 1997). Critical theory however, is neither positivist nor interpretative, recognising that different research traditions are linked to particular social interests (Habermas 1989). According to Herda (1999), critical interpretative analyses see the use of the word ‘critical’ as making judgements about the legitimacy of an interpretation, consistent with the work of Habermas (Herda 1999).

Like interpretative researchers, critical theorists do not accept positivist distinctions made between facts and values. Habermas (1989) took an anti-positivist stance, critical of constructing people’s experiences as facts, which he saw as having an ‘empirical-analytic’ orientation. Also like interpretative theoretical approaches, critical theory is dubious of positivist research claims of objectivity and impartiality. Central to critical research however ‘is the idea that knowledge is structured by existing sets of social relations. The aim of a critical methodology is to provide knowledge which engages the prevailing social structures’ (Harvey L. 1990: 2). Critical theory though, unlike positivist and interpretative research approaches, includes taking actions that are in the interest of making the world a more just place (Usher R. 1996):

critical theory is emancipatory – the unmasking of ideologies that maintain the status quo by restricting the access of groups to the means of gaining knowledge and the raising of consciousness or awareness about the material conditions that oppress or restrict them (Usher R. 1996: 22).

While this thesis has not directly used or applied critical theory, it is nonetheless noted here that Herda (1999) and John Thompson (1981) in particular, have brought interpretative and critical theories together, and these authors have been drawn upon in this thesis.
Furthermore, it was noted in Chapter One that there can be difficulties with using interpretative theories with Gramsci’s work on hegemony, and with questions of ideology. Countering arguments about the incompatibility between ideological critique and interpretative theories, Ricoeur (1986) has stated that

I do not see how we can have critique without also having an experience of communication. And this experience is provided by the understanding of texts. Hermeneutics without a project of liberation is blind, but a project of emancipation without historical experience is empty (Ricoeur 1986: 236-237).

Here, the importance of communication in research is reiterated.

In this study then, interpretative approaches have focused upon social practices, where human action is assumed to be meaningful (Usher R. 1996). Such an approach has been aimed at developing interpretations, understandings and explanations of the context within which the research is located, and of the processes whereby the research influences and is influenced by the context. To reflect the dynamic and inherently social and cultural nature of schooling, this thesis has required the theoretical complexity offered through the use of social and interpretative research approaches. There has been a preference then for using interpretative approaches, and in particular narrative theory along with the concept of hegemony.

**Narrative Theory**

A narrative is a story (Berger A. 1997; Polkinghorne 1988; Riessman 1993; Sarbin, 1986). Polkinghorne (1988) states that ‘as I use it, the term “story” is equivalent to “narrative”’ (Polkinghorne 1988: 13). Stories or narratives comprise various events, and can be told in a number of different ways (Berger, A. 1997). Stories are central to our lives; ‘we organize our experience and our memory of human happenings mainly in the form of narrative – stories, excuses, myths, reasons for doing and not doing, and so on’ (Bruner J. 1991: 4). Carr (1986) asserts that ‘narrative structure
pervades our very experience of time and social existence’ (Carr 1986: 9). Polkinghorne (1988) defines narrative as ‘the fundamental scheme for linking human action and events into interrelated aspects of an understandable composite’ (Polkinghorne 1988: 13). Narrative theory then, can be considered as an organising principle for human action (Bruner J. 1986; Sarbin 1986). Narratives can create meanings ‘by noting the contributions that actions and events make to particular outcomes and then [configure] these parts into a whole episode’ (Polkinghorne 1988: 6). Casey (1995) explains that ‘storytelling is the way to put shards of experience together, to (re)construct identity, community and tradition, if only temporarily’ (Casey 1995: 216).

Narrative theory has been used by a variety of disciplines including cultural and media studies, television, radio and film (Berger, A. 1997; Denzin 1995), literature (Barthes 1972; 1977; Scholes R. and Kellogg 1968) and history (White, H. 1973, 1981). It interests philosophical authors such as Ricoeur (1984, 1985, 1988a) and MacIntyre (1985), anthropologists such as Geertz (1973, 1988), psychologists such as Jerome Bruner (1986, 1990, 1991) and Sarbin (1986). Narrative theory has been employed by McCloskey (1990, 1992) to examine the language used in economics, and has been applied in multi-disciplinary ways by Toolan (1996) to examine issues from the viewpoints of sociolinguistics and literary theory. Van Dijk (1988) has combined psychological and sociolinguistic models using narrative theory, and Balkin (1998) has brought narrative theory to bear on questions about culture, history and ideology.

Applied disciplines such as counselling, psychotherapy and psychoanalysis (Bernstein, J. 1990; McLeod 1997; Spence 1982), family therapy (White, M. 1995, 1997), nursing (Emden 1998a, 1998b), strategic management and organisational studies (Barry and Elmes 1997; Boje 1991, 1995, 1999; Cwerniawski 1997; Drummond 1998a, 1998b; O’Connor 2000) and school education (Apple and Oliver 1998; Barone 1992; Beattie 1995; Brewer 1985; Brown and Moffett 1999; Bryson and de Castell 1998; Butt,
Townsend and Raymond 1990; Casey 1995; Clandinin and Connelly 2000; Connelly and Clandinin 1988a, 1988b; Cortazzi 1993; Elbaz 1990; Luke A. 1997a; Reissman 1993), use narrative theory. Authors in each of these disciplines use narrative theory because they are interested in investigating the ways people make meaning through the use of stories, language and discourse. Central to narrative theory then, are the use of stories, which therefore foregrounds language and meaning. As such, narrative theory has much to offer the study of public policies (Roe 1994; Luke A. 1997a).

Making Meaning: Stories, Language and Discourse

Central to narrative theory are stories, language and discourse, in order to make meaning (Bruner J. 1986; Polkinghorne 1988). Stories come in different forms and perform a wide variety of functions. We tell stories (for example) to relate an event that has happened to us or to convey a message, such as to make a moral point. Stories require an understanding of language in order to be told. Berger and Luckmann (1979) describe this human capacity by stating that ‘language provides the means for objectifying new experiences, allowing their incorporation into the already existing stock of knowledge’ (Berger and Luckmann 1979: 86). They suggest that ‘language objectivates the shared experiences and makes them available to all within the linguistic community, thus becoming both the basis and the instrument of the collective stock of knowledge’ (Berger and Luckmann 1979: 85-86). In this way telling stories seems to be a fundamental way of expressing ourselves and our world, to others (McAdams 1993).

Polkinghorne (1988) argues that narrative constructs the realm of meaning, and therefore requires the use of linguistic data. ‘Language is commensurate with meaning’ (Polkinghorne 1988: 7); ‘the production and understanding of narratives is a function of the capacity of human beings to use language’ (Polkinghorne 1988: 23). He argues that conveying narrative meaning requires discourse, where Polkinghorne (1988) considers discourse to be larger than a sentence, and can be either or both written or spoken. ‘A discourse is an integration of sentences that produces a global meaning that
is more than that contained in the sentences viewed independently’ (Polkinghorne 1988: 31). Ball (1993) asserts that ‘discourses embody the meaning and use of propositions and words. Thus, certain possibilities for thought are constructed. Words are ordered and combined in particular ways and other combinations are displaced or excluded’ (Ball 1993: 14). It is this deliberate and considered choice of words that makes policy statements reflections of what it is the State is asserting as important, and these statements therefore have been useful to draw upon in this study.

The functionality of language is attended to by Damon Young (2001) who asserts that dialogue is a pre-requisite for democracy (and here ‘dialogue’ is taken as to be synonymous with ‘discourse’). He states that ‘with dialogue we learn more about our fellow citizens. Reach sensible conclusions and may therefore make important contributions to our communities. Through dialogue, we may foster understanding and do justice to one another’ (Young, D. 2001: 3). Stories, language and discourse therefore are socially and culturally important, and the recognition of this has underpinned this public schooling sector study.

Plots and myths
Maranda (1973) links discourse to the construction of plots in narratives, suggesting that discourse refers to ‘the articulation of narrative units into a plot’ (Maranda 1973: 13). A plot can be considered to be a series of actions that are linked to one another to tell the story. There can be multiple voices competing for the carriage of the plot. The plots and various voices can be in accord or be discordant to each other. A story then can comprise one or more plots.

Narratives implicitly and explicitly make use of plots (Sarbin 1986). The events that take place and the activities undertaken by the characters in plots, generate the action for narratives (Berger, A. 1997). Polkinghorne (1988) defines a plot or storyline as ‘the means by which specific events are made to cohere into a single narrative’ (Polkinghorne 1988: 18). He argues
that ‘it is the plot which shows the part an individual action contributes to the whole experience’ (Polkinghorne 1988: 18). Plots therefore allow us to construct individual events together in the present, albeit that they may draw on a stock of knowledge developed from the past and the present. In this way they provide a way of projecting into the future. Therefore time and plot are inextricably linked.

There are different sorts of plots including tragedy, comedy, romance, satire (Reissman 1993), and it will be seen that in policies, there are utopian quests. These plot forms traditionally are considered to synthesise events into a meaningful whole. For Ricoeur (1984), it is through the plot that ‘goals, causes, and chance are brought together within the temporal unity of a whole action’ (Ricoeur 1984: ix). Polkinghorne (1988) warns however, that while it is possible to identify different sorts of plots, categorisation of plots into a typology is only mildly useful at an abstract level, suggesting that the context of the narrative’s plots is more important than the possibilities of delineating structures in common.

Like plots, some narratives include myths. The word ‘myth’ has developed several definitions (Williams, Raymond 1976). Gergen (1992) has argued that myths are stories that have carried the form and content of stories or narratives, over time. Maranda (1973) defines ‘myth’ as

the structured, predominantly culture-specific, and shared, semantic systems which enable the members of a culture area to understand each other and to cope with the unknown. More strictly, myths are stylistically definable discourses that express the strong components of semantic systems (Maranda 1973: 12-13).

Raymond Williams (1976) however has suggested that since the middle of the nineteenth century, ‘myth’ has come to mean a story that is untrustworthy and maybe even ‘deliberately deceptive’ (Williams, Raymond 1976). Barthes (1972) has argued though, that myths are depoliticised speech, where myths should not be read as motives but as reasons. He suggested that ‘myth hides nothing and flaunts nothing: it
distorts; myth is neither a lie nor a confession: it is an inflexion’ (Barthes 1972: 120). Barthes (1972) argued moreover, that while myths are forms of speech they are not confined to oral speech. He suggested that mythical speech includes ‘modes of writing or representations; not only written discourse, but also photography, cinema, reporting, sport, shows, [and] publicity’ (Barthes 1972: 110). Thus as forms of discourse, plots and myths can be reflected through a range of artefacts that communicate to others and as such, contribute to the forming of narratives.

It will be seen, particularly in Chapter Five, that artefacts of communication within the schooling sector, such as policy texts, can be considered as comprising plots or myths depending upon the interpretation placed upon them. It is the myths however, that are arguably more worrisome as they can be considered to ‘distort’ and possibly mislead the uncritical reader.

Social And Cultural Contexts
Societies and cultural groups have and use stories to convey information and meaning about events, actions and things. Here a ‘society’ can be considered to be ‘the body of institutions and relationships within which a relatively large group of people live; and as our most abstract term for the condition in which such institutions and relationships exist’ (Williams, Raymond 1976: 243). Governments and schools are institutions within our society.

Schooling occurs in an assortment of social and cultural contexts in Australia, and as Codd (1988) recognises, policy research begins ‘with the recognition of that context’ (Codd 1988: 244). In this study consideration of the use of stories to convey meaning is undertaken through interpreting the stories that occur in social and cultural contexts. Since stories are told to convey meaning, narratives therefore both contribute to the construction of social situations and occur in socially constructed situations. Policies too are constructions of social situations and occur in socially constructed situations.
and as such can be considered as a process and also as an artefact or product of the respective context within which it has been developed.

Weedon (1987) asserts language and social relations are linked by stating that

the common factor in the analysis of social organisation, social meanings, power and individual consciousness is language. Language is the place where actual and possible forms of social organisation and their likely social and political consequences are defined and contested. Yet it is also the place where our sense of ourselves, our subjectivity is constructed. (Weedon 1987: 21, emphasis in the original).

Mumby (1993) adds to this by suggesting that narratives are socially symbolic acts. He argues that this is because narratives take ‘on meaning only in a social context and … play a role in the construction of that social context as a site of meaning within which social actors are implicated’ (Mumby 1993: 5). Hayden White (1981) on the other hand, sees narratives as an implicit part of the social and cultural fabric of society and that this is consistent across different contexts or settings. He draws on Roland Barthes’ comments, that narrative ‘is simply there like life itself …international, transhistorcial, transcultural’ (White, H. 1981: 1).

Social contexts
Geertz (1973), Richard Harvey Brown (1987) and Ricoeur (1977, 1978a) argue actions within society can be viewed metaphorically as narrative texts. Ricoeur (1984) suggests that social contexts comprise a ‘whole set of conventions, beliefs and institutions’ (Ricoeur 1984: 58), and that these furnish ‘a descriptive context for particular actions … [which] confers an initial readability on action’ (Ricoeur 1984: 58, emphasis in the original). Ricoeur (1978a) states, ‘the notion of text is a good paradigm for human action, … [as it] is in many ways a quasi-text. … Action, like a text is an open work, addressed to an infinite series of possible readers’ (Ricoeur 1978a: 160-161). This concept of social contexts being composed of
multiple texts can be applied to the institutions or organisations of schools and school systems that form part of our society.

Viewing society and its composite institutions as ‘text’, means that education departments as systems of organisation, and schools as organisations, can be viewed metaphorically as texts, and therefore are available to be ‘read’ (cf Ricoeur 1977). Schools and school systems are institutions located in the larger social and cultural fabric of Australian life. They have their own traditions, language and organisational arrangements, and operate within their own timeframes and conditions. Interpreting the digital technologies policies of the Australian public schooling sector through the narratives that are placed before us, with their use of language, artefacts and symbols, provides us with insights into how we culturally and socially view the meanings of these policies. The interpretations and understandings of these policies are debated in Chapter Five.

Cultural contexts
Culture and narrative theory intersect as Drummond (1996) has summarised.

Culture is narratively constituted and incorporates behaviour, documents, together with rites, myths, narratives, symbols, beliefs and values. People in their contexts are available to be read. To put this slightly differently, culture could be thought of as being composed of different kinds of texts or narratives (Drummond 1996: 52). In attempting to define the meaning of the word ‘culture’, Raymond Williams (1976) states that ‘culture is one of the two or three most complicated words in the English language’ (Williams, Raymond 1976: 76). He identifies several reasons for this and among them indicates that the word ‘culture’ ‘has now come to be used for important concepts in several distinct disciplines and in several distinct and incompatible systems of thought’ (Williams, Raymond 1976: 76-77). He therefore goes on to suggest that ‘conceptual usage has to be clarified’ (Williams, Raymond 1976: 80).
In this study, the concept of ‘culture’ is drawn mainly from the work of Michael Apple (1989) and Raymond Williams (1983a, 1989). Apple (1989) asserts that culture can be considered in two inter-related ways: firstly as a lived process or as Raymond Williams (1989) has described, as a whole way of life; and secondly, it can be considered as a commodity (Apple 1989). According to Apple (1989), this means that ‘culture’ can be considered as the social process by which we live our lives and at the same time can be the products of our culture. This means that culture can refer to both processes and products. Both views of culture are conceptually useful for this thesis, as policies too can be considered as both processes and products.

Apple (1989) argues however, that such a distinction can only be maintained at an intellectual level since products such as teaching resources (for example textbooks and now online teaching and learning materials), are really a part of the larger social processes of our society. In other words, ‘culture’ can be considered as both the products and processes that generate ‘a shared system of meanings [that] is learned, revised, maintained, and defined in the context of people interacting’ (Spradley 1979: 6). Digital technology products advocated for use in schools for example, are therefore outcomes of social relations between people. Such a definition of culture is what Raymond Williams (1983a) identifies as a ‘social’ definition. He describes this view of culture as one that describes certain ways of life, and expresses certain meanings and values. He suggests that these are evident in art, teaching and learning, and in institutions and ordinary behaviour, and as such, are important to examine and interpret.

Polkinghorne (1988) argues that narratives are important in cultural contexts because ‘at the cultural level, narratives serve to give cohesion to shared beliefs and to transmit values’ (Polkinghorne 1988: 14). Drummond (1996) implies this to be a reflexive process by stating that ‘as one participates in a culture, one learns the narratives’ (Drummond 1996: 53). He goes on to state that ‘the culture of a society will be represented in the institutions of that society but each institution will bear the marks of its own uniqueness’.
Blacker (1992) notes however, that no matter the forms that social systems take, they are constructed by people and therefore are the result of actions by those participating in them.

The importance of telling and listening
Narratives can ‘perform the function of being the stored memory with regard to a people’s sense making’ (Drummond 1996: 52). The importance of narratives then includes their functioning as a collective memory of people, within social and cultural contexts. This was highlighted (for example), with the stories of Australia’s ‘Stolen Generations’. Outrage among some sections of the community occurred when the Australian Prime Minister, Mr John Howard discounted the legitimacy of the stories from these generations (cf Luke A. 1997b). The Report from the National Inquiry into the ‘Stolen Generation’ however, highlights the importance to people of the telling of, and listening to stories that legitimates people’s experiences, as the following extract demonstrates:

> the Inquiry has been of fundamental importance in validating the stories of generations of Indigenous people who until now have carried the burden of one of Australia’s greatest tragedies. … The process of telling and listening has only begun (Human Rights and Equal Opportunity Commission (HREOC) 1997: 33).

Further, Hayden White (1981) suggests that narrative can be considered as providing a solution to ‘the problem of how to translate knowing into telling’ (White, H. 1981: 1, emphasis in the original). Stories therefore, are important in legitimating people’s lives, and as Carr (1986) argues, storytellers and an audience (the tellers and the listeners), are important actors, in an understanding of narrative theory.

Allan Luke (1995) asserts however, that ‘systematic asymmetries of power and resources between speakers and listeners and between readers and writers can be linked to the production and reproduction of stratified political and economic interests’ (Luke A. 1995: 12). This again reflects how important stories can be to peoples’ lives, and to slightly pre-empt
discussion later in this chapter, it also alerts us to the importance of using narrative theory with the concept of hegemony. Legitimating stories recognises the storytellers’ claims to ‘truthfulness’. Through the activity of listening to and acknowledging the stories people tell, links the knowing and the telling: knowing something is truthful and telling someone else turns the knowing into an object to be shared. Acceptance by the listener of the truth of a story legitimates it. This though can also contribute to the development of ‘commonsense’. Debate about the use of language to construct ‘commonsense’ is taken up further, later in this chapter, when discussing the concept of hegemony (Gramsci 1971).

Organisations as texts
In common parlance texts are usually considered to be artefacts consisting of the written word (Little, Onions and Friedrichsen 1973). Drawing on Kress (1989), Allan Luke (1995) argues that texts assemble ‘subject positions’, or in other words ‘they build up particular possible worlds through series of lexicogrammatical choices and differences played out in the text’ (Luke A. 1995: 17). Writing makes text concrete; it ‘serves to fix a text’ (Olson 1990: 102). Kress (1997) asserts that writing ‘has been the most valued means of communication over the last few centuries – the one that has regulated access to social power in Western societies’ (Kress 1997: 59). Meanings therefore can be inferred from the written artefacts of organisations such as memoranda, policy documents and budget statements, as has been the case in this study.

Allan Luke (1995) however, defines text more broadly than that used in common parlance, stating that text is ‘language in use, any instance of written and spoken language that has coherence and coded meanings’ (Luke, A. 1995: 13). Texts then can be considered on a more metaphorical level, as reflected by Lindlof (1995) who states that ‘some artefact that has been interpreted holistically as a form, style, or genre, is called a text’ (Lindlof 1995: 51, emphasis in the original). Furthermore, Kress (1997) has indicated that while writing has had a pre-eminence in cultural and political
discourse that ‘communication has always been multi-semiotic’ (Kress 1997: 60). Therefore meaning can be made using written texts as well as all other forms of human expression. While meanings can also be inferred from the nature of the use of language, so too meaning can be gathered from organisations and their structures, architecture, artistic works, icons, rituals, and beliefs. These can all be ‘read’ as texts (Drummond 1996). It is argued here then that an understanding of an organisation can be developed through the narratives used by and about an organisation including through the use of texts generated by that organisation.

Clegg (1993) observes that organisations comprise ‘a complex play of interorganizational relations’ (Clegg 1993: 38), and so there are many stories about organisations that can be gathered. These stories can be provided through speech acts such as provided in conversations and interviews, by interpreting the written texts generated by the organisation and by observers commenting about it. Drummond (1996) reminds us however, that ‘if we accept social reality or culture as text, or as multiple narratives, organisation culture can also be viewed as text or multiple narratives’ (Drummond 1996: 51). Polkinghorne (1988) explains that organisational narratives ‘function to help members to interpret and signify the purpose of the organization and the role of its individual members’ (Polkinghorne 1988: 122). ‘Reading’ the culture therefore includes interpreting the ‘discursive constructions of situations and subjects’ (Johnson K. 1983: 31), and this includes the necessity to listen to informants (cf Forester 1980) as well as to ‘read’ artefacts and situations. The activity of listening, as a part of the research process for this study has been considered as important, as will be seen in the following chapter.

In determining what is an organisation, Kenwyn Smith (1982) has asserted that organisations are relational. He posits that an organisation is there because of the

system of relations that makes the whole, which constitutes the essence of what we mean by the term organisation. Without a system
of relations to draw the parts together into a whole, there is no organisation, just free-floating parts. Hence to talk about organisation is to talk about relations among parts, and relations among relations (Smith, K. 1982: 328).

Making a similar point, van der Heijden (1997) defines an organisation as ‘a community, based on a system of interactions which exist in a strategic conversation’ (van der Heijden 1997: 274). Berger and Luckmann (1979) point out though that while organisations or institutions comprises relations, to achieve cohesiveness requires ‘the transmission of the meaning of an institution based on the social recognition that the institution is a “permanent” solution to a “permanent” problem of the given collectivity (Berger and Luckmann 1979: 87). Boje (1991), in recognising the importance of relationships between people for the cohesiveness in organisations, argues that ‘story-telling is the preferred sensemaking currency of human relationships among internal and external stakeholders’ (Boje 1991: 106) of organisations. Polkinghorne (1988) makes a similar point by observing that narrative research is ‘used by organizational analysts who seek to describe the stories that underlie the values and assumptions of an organization and link the members into a group’ (Polkinghorne 1988: 162). Mintzberg (1994) has observed that executives within organisations prefer conversations to reading. He has observed that ‘study after study has demonstrated that managers of every sort rely primarily on oral sorts of communication’ (Mintzberg 1994: 258). Furthermore, Drummond (1996) asserts that viewing organisations as systems of relationships does not repudiate the objective world. He argues that the objective (structures and classes) and the subjective (viewpoints and relationships) of organisations are inextricably interwoven (Drummond 1996).

Recognition that organisations such as public schooling systems are ‘systems of interactions’ has informed the structure and method of this study. The use of the policy texts and ‘research conversations’ (Herda 1999) (to be discussed in Chapter Three) has provided windows for viewing the ‘strategic conversations’ that presently underpin the public schooling
systems in Australia. In this study, policy-makers are viewed as leaders within their organisations and as such the narratives they generate are important because they have the capacity to structure and shape the contexts for action by others. In addition, the ways in which the policies are ‘read’ by those receiving the policies, can be used as an indication of the meanings created, and as a point of reference for the actions (or inactions) taken (or not taken). This is cognisant that policies can have multiple readings. Therefore through the research conversations (Herda 1999) conducted for this thesis an understanding of what some of the authors of the policy texts intended, and how the policies have been interpreted, has been developed. This is discussed further in the forthcoming chapters.

Drummond (1996) has argued that since organisations are constructed by relationships that cannot be viewed in a concrete manner, that ‘one powerful way of understanding organisations is through the metaphors which are used’ (Drummond 1996: 51). Metaphors are powerful tools that are in the language and action of everyday life (Lakoff and Johnson 1980). A metaphor is figurative, and can be considered to be the ‘denotation of one thought content by the name of another which resembles the former in some respect, or is somehow analogous to it’ (Cassirer 1973: 25). William Richardson (1999) defines a metaphor, stating that as ‘a trope of language, metaphor signifies the substitution of a signifier for another signifier’ (Richardson 1999: 209). Lakoff and Johnson (1980) describe metaphors as being a part of our ordinary conceptual system. They suggest that the ways in which we think and act as a part of our everyday life, is metaphoric in nature. They argue that ‘the concepts that govern our thought are not just matters of the intellect. They also govern our everyday functioning, down to the most mundane details’ (Lakoff and Johnson 1980: 3). They go on to say that

our concepts structure what we perceive, how we get around in the world, and how we relate to other people. Our conceptual system thus plays a central role in defining our everyday realities. If we are right in suggesting that our conceptual system is largely
metaphorical, then the way we think, what we experience, and what we do every day is very much a matter of metaphor (Lakoff and Johnson 1980: 3).

It will become apparent in later chapters that the public policies advocating the use of digital technologies in schooling are rich in metaphors. These therefore, have been available for reading and interpreting.

The Educative Role Of Narratives

It has been argued thus far, that the variety of types of stories we use and the different functions that stories perform in our lives allows us to make sense of the world and to learn the rules of the society in which we live (Polkinghorne 1988; McAdams 1993). ‘The stories we encounter carry the values of our culture by providing positive models to emulate and negative models to avoid’ (Polkinghorne 1988: 14). That is, while stories provide meanings to human experiences, they also provide a paradigm within which our actions can be interpreted. MacIntyre (1985) states, ‘man is in his actions and practice, as well as in his fictions, essentially a story-telling animal’ (MacIntyre 1985: 201). He goes on to say:

deprive children of stories and you leave them unscripted anxious stutterers in their actions and their words. Hence there is no way to give us an understanding of any society, including our own except through the stock of stories which constitute its initial dramatic resources (MacIntyre 1985: 201).

Narratives then, play an educative role in our lives.

In Australia, this point is illustrated, for example, by seeing the importance of stories in Aboriginal communities’ lives; something that is consistently highlighted by them.

Storytelling is an integral part of life for Indigenous Australians. From an early age, storytelling plays a vital role in educating children. The stories help to explain how the land came to be shaped and inhabited; how to behave and why; where to find certain foods (Australian Museum 2000).
Narrative then, provides a way ‘in which human experience is made meaningful’ (Polkinghorne 1988: 1), and a way of using those experiences for educative purposes.

Damon Young (2001) makes a similar point by suggesting that by understanding ourselves in a narrative fashion, we can begin to see ourselves as ‘storied storytellers’ (Young, D. 2001: 5). As such, stories, and the composite discourses, language and meanings held within them it is argued, are important for undertaking this study of the public policies advocating the use of digital technologies in schools, as it provides a theory and method of research that is congruent with the activities undertaken as part of the daily life of those working and studying within the public schooling sector.

**Narrative Research And School Education**

If stories are central to our lives, then schools are full of stories and storytellers: students have stories, there are parents’ stories, teachers’ stories, and leadership and management stories. Kogan (1985) states ‘education is a social artefact embodying aspirations about the good life for the individual and the best arrangements for the whole society’ (Kogan 1985: 11). Viewing schooling as a ‘social artefact’ allows us to examine the stories and see the ambitions that are reflected in the stories we tell about both the processes of schooling and the morals and values that as a society we wish to carry to the next generation. Schooling is ‘deeply implicated in the cultural, political and economic relations that give it its meanings’ (Apple 1995: xiv) and there are stories about and around these larger societal relationships too. Stories and the processes of schooling then, are closely linked.

**Existing research**

Since the late 1980’s narrative research has been used in different ways to highlight and examine the processes of schooling (cf Brewer 1985; Connelly and Clandinin 1988a). Cortazzi (1993) drawing on Butt,
Townsend and Raymond (1990) has recognised the implicit place the use of stories seems to have in schooling. Cortazzi (1993) identifies that narrative is central to education stating that in a sense it exists ‘for the individual and collective life histories of future generations – to give them a sense of personal and social agency in engaging the reality of our current and future world’ (Cortazzi 1993: 15). Educators in schools then, do their business by telling stories – relating how this or that or the other happened.

Elbaz (1990) has suggested six reasons why narratives are useful in researching school education. Firstly, she has asserted that the telling of stories relies on tacit knowledge to be understood; secondly, she has argued that storytelling takes place in a context, thereby giving meaning to what is being said; thirdly, she has stated that storytelling calls on traditions of telling which make possible certain kinds of story that have accepted structures for the beginning and end; fourthly, she sees that stories often involve a moral or a lesson to be learned; fifthly, she argues that stories are often used as a way of voicing criticism in a form that is socially acceptable or at least not dangerous to the teller; and finally, she suggests that the telling of a story reflects the inseparability of thought and action, since it simultaneously is making public someone’s thinking while also constituting a performance in the real world in real time (Elbaz 1990).

Clandinin and Connelly (2000) argue that education and narrative have in common the construction of meaningful human experience. As Connelly and Clandinin (1990) assert, it is through the use of stories that humanity is able to interpret or make sense of the world. Applying the concept to education research they state that

the main claim for the use of narrative in educational research is that humans are storytelling organisms who, individually and socially, lead storied lives. Thus, the study of narrative is the study of the ways humans experience the world (Connelly and Clandinin 1990: 2).

As with everyday life, stories in school education are used for a range of purposes. Stories form a central part of teaching and learning.
Stories are used in schools by teachers to convey information from one to another about professional issues. This is outlined by Cortazzi (1993) who refers to the work of Elbaz (1990). Cortazzi (1993) notes that Elbaz has observed the ‘sheer presence of story’ within the education research work she undertook. Elbaz (1990) came to the conclusion that stories were acquiring a sort of pedigree in the form of a complex theoretical backdrop for her research work. Cortazzi (1993) states that story ‘is that which most adequately constitutes and presents teachers’ knowledge … story is the very stuff of teaching, the landscape within which we live as teachers and researchers’ (Cortazzi 1993: 9). Beattie (1995) suggests that the work of Elbaz (1990) is important. Through the use of interviews with teachers, Elbaz (1990) has provided a basis upon which teachers’ practical knowledge can be conceptualized. Ensuring that research into school education issues attempts to make sense of the practical as well as the theoretical problems of the profession has also been articulated by Kemmis (2000). Narrative theory has been used to research issues in schooling then, as it has given a ‘voice’ to teachers’ views of their work.

Connelly and Clandinin (1988b) used the process of telling stories, as a mechanism for getting teachers to narrate and reflect on their teaching practices. Researchers such as Beattie (1995) have used field notes and reflective writings. Louden (1991) noted the importance of teachers’ reflections of their own work, arising from his research conducted by working alongside of teachers in their classrooms. Maas (1991) used narrative theory when working with groups of students, linking the telling of stories with notes kept in journals.

The use of metaphors in educational narrative research was noted by Connelly and Clandinin (1988a) in defining narrative theory. They refer to the importance of using metaphors in storytelling in order to make meaning of personal experiences through a process of reflection, where storytelling is a key part and in which metaphors take their place (Connelly and Clandinin
Brown and Moffett (1999) suggest that metaphors can be used as both a teaching tool and as a research methodology since metaphors can stimulate discussion. They state that ‘the power of the metaphor as a catalyst for dialogue is that it engages not only the intellect but the heart, the values, and the deep aspirations of all participants’ (Brown and Moffett 1999: 10). While the use of metaphors in education research has a place, metaphors assume a shared understanding of the codes being adopted in the use of language. This means that while metaphors are used within narrative research, it has been important in this study to recognise that they can also be used to exercise hegemony by one group of people limiting the access to specific codes of language (such as metaphors), to others. The use of language in constructing hegemony then, is discussed later in this chapter.

In Australia, Gough (1994) has used narrative theory to ‘explore ways in which the kinds of stories we usually classify as fiction – and the modes of storytelling that produce them – might inform reading and writing in educational research’ (Gough 1994: 48). He argues that serious inquiries in education are possible by recognising that teaching involves the craft of storytelling.

To investigate the use of digital technologies in schooling Bryson and de Castell (1998) and Apple and Jungck (1998) have used narrative theory. In their chapter, *Telling tales out of school*, Bryson and de Castell (1998) describe three different kinds of stories, using what they call a ‘text-based interpretative strategy’ (Bryson and de Castell 1998: 67), which sees each of the three stories told from different perspectives. One is told from a techno/modernist position, another from a critical theorist’s perspective and the last is a postmodern tale (Bryson and de Castell 1998). They argue that it is useful to analyse stories about the use of digital technologies in schooling from different perspectives. They argue that each differently reflects the assumptions that underpin the kinds of knowledge, constructions of identity, purposes of schooling and the extent to which digital technologies can be used in the classroom (Bryson and de Castell 1998). Apple and Jungck
(1998) tell one story about the use of digital technologies in the classroom. They highlight the role of social conditions in contouring the ways digital technologies are used by teachers.

As can be seen from this summary of the existing school education research that has used narrative theory, much of this activity has focused on teachers’ work in classrooms. Less use of narrative theory has been used for education policy research. Stephen Ball (1990; 1993), Alan Reid (1998), Allan Luke (1995; 1997a) and Sandra Taylor (1997) have used discourse theory to address educational policy issues, and although not grounded in school education, Roe (1994) has undertaken policy research using narrative theory. Before proceeding further though, consideration of what constitutes public policies, is now required. An overview of the nature and characteristics of public policies then, is discussed in the following pages.

**Public Policies**

In her delivery of the Radford Lecture, Lyndsay Connors (2000) commented on the value of narrative in relation to policies stating that at the 1994 annual meeting in New Orleans of the American Education Research Association, Jerome Bruner reminded researchers of the power of narrative in teaching and learning. He noted that narratives start with trouble, with disruption to the smooth surface or flow of events. Policy, like narrative, also tends to start with trouble or with people needing something. Public policy is one of the important ways in which we try to express what we think we are doing to deal with that trouble or to meet that need (Connors 2000: 1).

As indicated in Chapter One, the phrase ‘public policies’ while problematic, is one that can refer to both the texts and the processes of policy production leading up to the development of the policy texts and to the implementation processes where policy texts are interpreted and reinterpreted (cf Taylor et al 1997). Ball (2000) describes policies as ‘textual interventions [put] into practice …. Policies pose problems to their subjects. Problems that must be
solved in context’ (Ball 2000: 1833). Further, public policies can be considered to articulate what governments either chose to do or not do (cf Considine 1994). That is, it is argued that public policies have as their overall intention to bring about coordinated action to achieve a predetermined outcome (Bridgman and Davis 2000); to ‘deal with trouble’. This requires an agency for administration and implementation (Considine 1994). This then raises the question of ‘what is the role of the State in the production of public policy texts and their implementation?’

**Public Policies And The Role Of The State**

Public policies are considered as those produced by the State. The concept of ‘the State’ however is not one that is straightforward to grasp (cf Held, Anderson, Gieben, Hall, Harris, Lewis, Parker and Turok 1984). The nature of ‘the State’ is a highly contested term. Nonetheless, it is argued here that an understanding of the role of the State is necessary for developing interpretations and understandings about the production of public policy texts, and of their implementation.

Taylor et al (1997) identify that the State comprises a complex set of arrangements, defining ‘the State’ as those practices, processes and structures of governments at each of the political, legislative, judicial and administrative levels. It frames the relationships between the various activities of the government as it seeks to manage society and the conduct of its institutions and its citizens (Taylor et al 1997: 76).

While ‘the State’ is a useful term to describe the collection of the various parts that form the apparatus of government, it is important to acknowledge that since the State comprises many parts, these parts can have conflicting interests. Complex relationships exist between the administrative arms of government (or the bureaucracy) and that of the elected politicians forming government. Held et al (1984) describe the bureaucracy of the State as ‘the state’s consciousness’ (Held et al: 26), using the term ‘bureaucracy’ to refer
to the groups of people who are paid by the State: the State’s officials. To
pre-empt discussion in Chapter Five though, it is worth noting here that
presently, bureaucrats as well as politicians are influential in the setting of
policy agendas, which increasingly are being linked to the economy.

Pusey (1992) has conducted a study of the senior executive service within
the federal bureaucracy in Canberra. He concluded that ‘a nation building
state was changing its mind’, moving away from the provision of public
services as a public good, towards ‘economic rationalism’ (referring to the
increasing use of private markets in the public sphere), as a public policy
position. Kenway and Epstein (1996), Lingard (1993a) and Marginson
(1997) amongst others also have noted that the form of government in
Australia has been changing, moving to the establishment of market based
economies in the public sphere. Recognition of these changes is seen as
important to acknowledge when considering the contested nature of public
policy production, which is discussed shortly and debated in more depth in
Chapter Five.

Individually and as a group, bureaucrats struggle over the construction and
notes that struggles over public policies occur broadly ‘between diverse,
competing, and unequal forces within civil society, within the state itself
and between associated discursive regimes’ (Kenway 1990: 59). Taylor et al
(1997) argue that the complexity of the relationships that exist for
determining public policies in part is due to tensions that arise from the
necessity for the State to gather and generate revenue and the requirement
to respond to the political demands of the citizens of the State. Drawing upon
Offe (1975, 1984), Taylor et al (1997) argue that such a tension requires ‘the
mediation of the policy process by state structures’ (Taylor et al 1997: 30).
It is through ‘mediation’ however, about what constitutes ‘the trouble’ and
justifies policy responses and the solutions proposed, which sees the
development and implementation of public policies. Lingard (1996) uses
Kickert’s (1991) description of ‘steering at a distance’ to argue that
presently, policies provide the State with a centralised mechanism for direct ing actions achieved in part by using accountability mechanisms to manage the processes.

It will be seen in Chapter Three that the nature of this study has taken into account that Ministers of Education and senior bureaucrats both develop and administer policies, and in Chapters Four and Five it will be seen that schooling in Australia is a part of a complex interplay between state or territory and federal governments. Federal, national, state and territory public schooling sector digital technologies policies have been constructed within this legislative environment and recognition of this context has been considered pertinent in this study, in order to address the central question identified for this thesis.

It is with this brief outline of the role of the State in public policy formation then, that the characteristics of policy texts and the processes through which they are developed will now be considered.

**Producing Public Policies**

Policies most often are written down. They are texts (Taylor, S. 1997), and therefore are artefacts. They are not usually written by a single author and often, are the result of multiple processes of production and implementation (Ball 1993). As indicated, public policies are developed through discourse and processes that involve politicians, senior public servants and sometimes, other community groups. Considine (1994) argues that policies emerge from relationships between key people; and ‘from identifiable patterns of interdependence between key social actors’ (Considine 1994: 1). Policy making then, can be considered as ‘an area of struggle over meaning’ (Taylor, S. 1997: 26). In this way, public policy is the distillation of many voices into a single voice. Conflicts in interest occur regularly (Considine 1994). Contestation over public policies and their wording occurs because these policies ‘embody claims to speak with authority, they legitimate and initiate practices in the world, and they privilege certain visions and
interests’ (Ball 1990: 22). They are ‘the outcome of competition between ideas, interests and ideologies that impels our political system’ (Bridgman and Davis 2000: 3). Therefore, the characteristics and purposes of public policies are important in specifying their intent, with their meanings and their effects being jointly important.

Cycle of policy making
Sandra Taylor (1997) suggests that policy making can be considered as a continuous cycle of policy making and remaking at various sites (Taylor, S. 1997). This implies reflexivity in policy development and implementation. Connors (2000) argues however, that there is ‘some artificiality in the concept of policy cycles’ (Connors 2000: 3). She asserts that policy agendas often have been completed by those creating them before those intended to implement the policy have even heard of it. Blackmore, Gough and Green (1994b) make the observation that during the 1980’s, policies were used in education to replace ‘direct bureaucratic fiat as the dominant form of state intervention’ (Blackmore, Gough and Green 1994b). They argue that policies were seen to allow the State to ‘steer’ complex administrative processes involving social, economic and political relationships. Views about the role of the State being corporatist in nature (Lingard 1993b), and the place policies hold within such a view, has seen policies considered as functioning as a rationalist management tool, where policies direct administrative processes.

It is posited in this thesis that the networks of people undertaking the systemic policy making processes advocating the widespread use of digital technologies in the public schooling sector, are the outcome of a mixture of political and senior bureaucratic discourses. The policy development approach for these policies, while arguably cyclic across the senior officers of the respective schooling systems and Ministers of Education, does not directly involve school based officers in those cycles. The purpose of these digital technologies policies, it is argued, is to direct actions. As can be seen in Appendix Seven and Table Ten in Appendix Eight, the location of the
authorship for the respective policies used by governments, and reviewed for this thesis, occurs within the senior ranks of government and at the political level.

Symbolic language of policies

Policies can be conceptualised as a kind of ‘symbolic language’ (Taylor, S. 1997; Troyna 1994), with specific terms ‘acting as ‘condensation symbols’ (Taylor, S. 1997: 28) within the social and cultural context. Ball (1990) has argued that values, assumptions, categories and stories – are woven together into a characteristic policy language, sometimes called a policy discourse. … The terminology helps to reduce a mass of detail to standard words and expected responses (Ball 1990: 15).

Taylor (1997) makes a similar point stating that recognising metaphors and symbols in policy research is important as these tropes have the ability to reduce a large amount of information into a condensed language, where the meaning is transferred through these metaphors and symbols.

It was posited in Chapter One that the language concerning the use of digital technologies is currently developing and emerging. Also, it has been argued earlier in this chapter that language and discourse are important in order to interpret and understand stories. Language and discourse therefore are central to constructing the meanings, and for developing interpretations and understandings of the ‘symbolic language’ used in the policies advocating the widespread use of digital technologies in public schooling. Exploring, interpreting and providing some explanations of these meanings then, is an important task for this thesis, in order to be able to examine some of the implicit assumptions made within these documents. As such, the use of language is seen to contribute to our interpretations, understandings and explanations of the symbols used in policies and thereby what constitutes public policies.
Public Policies Are Ideological

Stephen Ball (1990), Sandra Taylor (1997) and Taylor et al (1997) assert that public policies are ideological. The term ‘ideology’ is a contested term with a long epistemological history. Destutt de Tracy, a French philosopher coined the phrase in 1795 (Scruton 1982) and Gramsci (1971) noted the original meaning of ‘ideology’ as being the ‘science of ideas’ (Gramsci 1971: 375). He suggested however, that over time ‘ideology’ came to mean a specific ‘system of ideas’ (Gramsci 1971: 376). Althusser and Balibar (1970) defined ‘ideology’ as

the “lived” relation between men and their world, or a reflected form of this unconscious relation, for instance a “philosophy”. … It is distinguished … by the fact that the practico-socio predominates in it, … [and is] an essential element of every social formation (Althusser and Balibar 1970: 314).

Raymond Williams (1989) defines ideology, indicating that it

is not only the conscious system of ideas and beliefs, but the whole lived social process as practically organised by specific and dominant meanings and values. Ideology in its normal senses, is a relatively formal and articulated system of meanings, values and beliefs, of a kind that can be abstracted as a “world view” (Williams, R. 1989: 56).

Bill Green (1986) points out that ideology can be considered as a dynamic concept of different ‘levels, kinds and orders’ (Green, B. 1986: 6), where its dialectical and contradictory nature is recognised.

Considering public policies as ideological then, is taken here to mean that a set of beliefs, values and interests are constituting the way the authors of policies understand the world. These views are consciously and unconsciously reflected in the public policies they construct and the language that is used. That is, public policies are reflective of the worldviews of their authors and the agencies of their authorisation, which in this case is the State.
Public Policies Are Political

It is asserted that an understanding of the social relations involved and the ideological context within which policies are developed and distributed, is important for being able to understand how policies as texts may be intended and can be interpreted. As ideological statements, public policies reflect the political context within which they are generated. Public policies therefore are inherently political in their nature (Considine 1994; Luke, A. 1995; Taylor, S. 1997).

The articulation of different policy positions is how politicians make distinctions between each other and how they demonstrate that they can make a difference to the quality of life of people in their electorate (Ball 1990, Bridgman and Davis 2000). Government policies demonstrate to the electorate that the platforms upon which a given political party was elected, are being enacted. In that way public policy provides an accountability framework to the voting public. As such, policies are important political tools (Considine 1994; Bridgman and Davis 2000). Ministers of the Crown in concert with the relevant government department are responsible to the general public and to the respective political party, for the achievement of stated policy outcomes. This is to argue that elected political parties use government agencies to enact their stated policies.

Policies are intended to bring about action. Policies function ‘to persuade others towards certain understandings and actions’ (Barry and Elmes 1997: 432). The translation from intention to action is central both to the purpose of public policies (Ball 1990; Ball 1993; Bridgman and Davis 2000) and to narratives (Carr 1986; Ricoeur 1984). While public policy texts are statements proclaiming action, they are often utopian in nature, advocating the intention or ambition to bring about a social ideal (Prunty 1985). Policies therefore are complete with values underpinning the ideologies that outline what ought to be, in certain preferred contexts. Noting the values identifiable in the public schooling sector policies then, provides an
indication of the stories the State is aiming to portray. Seeking to understand these policy stories is undertaken in Chapter Five.

**Authors, Authorisation And Authority**

People develop policies. Public policies have authors; they are not disembodied statements. Considine (1994) asserts however, that setting out to ascribe the authorship of policy making to what he calls ‘real actors’, works against traditional views in policy theory, where policies are viewed as the embodiment of a fixed historical pattern. That is, the individual is viewed as benefitting or being disadvantaged according to the structures operating in society rather than through identifiable authors actively creating those texts.

It is argued here however, that the public policies and their associated organisational and social structures for policy making concerning the use of digital technologies in schooling, are not fixed, and are emerging. Identifying the authors of these policies then provides insights into the Ministerial involvement in policy-making and the ideologies inherent in these policies. This has made the authorial control of these policies an important element in this study.

**Authors**

Elaine Thompson (1990) indicates that public policies have authors stating that ‘public servants, especially senior public servants, are deeply involved in the making of policy’ (Thompson, Elaine 1990: 43). In this context, public policies are generated by people who are balancing the varying demands for the dominant ‘policy voice’. As Pusey (1992) observed senior public sector policy-makers and managers are constantly involved in making choices between competing definitions of situations and problems. Choices have to be made in contexts that are for the most part complicated, unstable, and indeterminate (Pusey 1992: 67).
Where complexity and uncertainty such as that described by Pusey (1992) exists, Roe (1994) advocates the use of narrative theory.

Many public policy issues have become so uncertain, complex, and polarized – their empirical, political, legal, and bureaucratic merits unknown, not agreed upon, or both – that the only things left to examine are the different stories policymakers and their critics use to articulate and make sense of that uncertainty, complexity and polarization (Roe 1994: 3).

As the central question for this thesis has been identified as ‘what does public schooling mean in Australia in the 21st century, with its past tradition of free, compulsory and secular schooling, and given that the present public schooling sector policies are urging the ubiquitous use of digital technologies?’, and since the merits of the policies are uncertain, Roe’s justification for using narrative theory, seems pertinent for this study.

Authorisation and authority
Public policies gain authority as a result of being authorised by the State, rather than gaining their authority directly from the author (Luke, C., de Castell and Luke, A. 1989). Government departments’ statements of policy therefore have authority, and as a consequence have their own power, legitimated through the specific legal provisions of a bureaucracy (cf Weber 1964, Eldridge 1971). Considine (1994) defines authority as ‘a specific form of activity in which those engaged in a relationship acknowledge the existence of legitimate power’ (Considine 1994: 5). In relation to institutional power such as that exercised by governments, he indicates that when the source of legitimate power ‘is invested in an institution [such as a school] it becomes a critical gateway through which values and resources must pass in order to survive or prosper’ (Considine 1994: 5). This means that ‘the authoritative allocation of values draws our attention to the centrality of power and control in the concept of policy’ (Prunty 1985: 136).
The following statement from the South Australian Department for Education, Training and Employment’s (DETE) Administrative Instructions and Guidelines (1999a), located on its website illustrates this by stating, policies and Instructions are statements of authority and, where necessary, they are supported by a commitment of resources. These statements are binding on schools by virtue of the authority of the Chief Executive. Policy statements will always be issued with the authority of the Chief Executive (DETE (SA) 1999a: 1).

Public policies as texts, in articulating intentions for action (Ball 1990; Considine, 1994) then, are authoritative value statements that can be considered as the ‘official discourse’ of the State (Codd 1988). Such documents usually set out strategic directions as a plan to achieve what is valued by the government and the relevant department. They provide written undertakings about priority areas for action. In the texts, the action is a ‘promised action’. It usually includes an overview of the mission and/or vision of the public organisation and provides principles upon which timelines, personnel and budgets should operate to achieve the documented priorities. Associated documentation is usually provided with them, to support their implementation, and to structure accountability frameworks.

It cannot be assumed however, that what policies espouse in texts is achieved in actions. Policy texts are the end of one process (the setting of intentions) and the beginning of another process (the implementation). To this extent, policies are part of a reflexive process (Taylor, S. 1997), but the policy texts themselves reflect intentions not achievements. Policies (like narratives) require a beginning, middle and an end to be a meaningful whole (cf Carr 1986; Cortazzi 1993; Kerby, 1991; Polkinghorne 1988; Ricoeur 1984, 1985, 1988a). For the authors of public policies then, once the policies are developed, their story has come to an end. Those receiving the policies however, are being ‘steered at a distance’ (cf Lingard 1996) and hence are at the beginning of their story. While those who have authored the
policies are at the end of their story, those receiving the policies are at the beginning, and are commencing to author their own stories.

Almost no matter how ambitious or utopian they are, public policies, through their authority and claims of legitimation, make truth claims. The truth claims have economic and social roles to play (cf Foucault 1980). They can be considered to be discourses that are accepted and made to function as true. Knight, Smith, and Sachs (1990) link truth claims with the way the official State policies ‘attempt to represent the world in factual terms so that certain kinds of practices flow “naturally” from them’ (Knight, Smith, and Sachs 1990: 133). In this way, as the single, dominant voice, they take on an instrumentalist function, that of setting the standard to which the collective ‘we’ aspire. That is, the policies are able to set what is commonly understood as the ‘commonsense’ (Gramsci 1971).

Considering public policies as truth claims means that they are easily linked to the necessity for rules (Considine 1994) and to accountability frameworks. In public policy, where gaps between policy and practice occur, or where this is perceived to be the case, the upshot is the same; trust of the public is undermined; a promise is broken, and the perceptions of truth are shattered. Accountability frameworks are the defence (or the Achilles heel) for the single voice, where governments demonstrate that policies have achieved their purpose if the accountability frameworks demonstrate this to be so.

The authority of public policies is also important as policies provide directions for the work of the public sector. Government policy documents articulate what is considered valuable within the department to which the policy belongs, and usually articulate in broad terms how the policy initiatives will be achieved. Public policies then are imbued with certain identifiable values and beliefs, which ultimately refer back to the purposes of the provision of public goods and services.
The authority of ‘official knowledge’

Policies also can be considered to constitute an example of what Apple (1993) refers to as ‘official knowledge’. Government policies have the official authority of the State, and as has been argued, their meanings are not neutral. Policies can be considered to embody what Raymond Williams refers to as selective traditions: ‘someone’s vision of legitimate knowledge and culture’ (Apple 1993: 49). Through the conversations undertaken for this research, it has emerged that a difficulty for those working in school education in Australia, is understanding the structures within which the ‘official knowledge’ (Apple 1993) is constructed, and what the implications are for students, their parents and teachers in schools. This has meant that questions concerning how, where and when to enter and intervene on issues arising in relation to the advocacy of using digital technologies in school education have been difficult for them to determine.

If you cannot make sense of what is happening around you, it is difficult to even know the questions to ask. This renders people impotent. Legitimate theorising and the ability to make useful suggestions for future action then, are not possible. As such, this study has tracked the authors, structures and processes impinging on the development of the public schooling sector digital technologies policies. Appendices Seven and Eight specifically provide summaries of this information.

Public Policies And Public Funds

Public policies influence how government budgets are allocated; for policy initiatives to be more than rhetorical platitudes, budgets are allocated to the initiatives intended to achieve the articulated policies. Alternatively, budget allocations can be considered as reflections of what is valued within either the government department or by the government of the day, or both. As Reid (2000) indicates, ‘resourcing education from public funds is a political act’ (Reid 2000: 1). Similarly, Bridgman and Davis (2000) indicate ‘policy is the instrument of governance, the decisions that direct public resources in one direction but not another’ (Bridgman and Davis 2000: 3). That is,
budgetary frameworks control the directions in which governments move (Pusey 1992).

The linking of money with public policies raises issues of ‘power’, since policies are statements of authority and linked to authority are concepts of power (Ball 1990; Berger and Berger 1976; Bridgman and Davis 2000; Weber 1964). Considine (1994) argues that policies are public exercises in power and states that ‘a public policy is an action which employs governmental authority to commit resources in support of a preferred value’ (Considine 1994: 3). He suggests that ‘policy’ is any or all of three things: the ‘clarification of public values and intentions; commitments of money and services; or granting of rights and entitlements’ (Considine 1994: 3). The details about the budgets attached to specific digital technologies policy initiatives have been summarised in Appendices Three, Four and Five, and are discussed further in Chapters Three and Five.

In summary then, embedded into the different sorts of policies are identifiable values, structures and relationships of power and control, and mechanisms for legitimating and privileging certain views over others. Stories and policies share some characteristics including having a context, or time and place, in which the story or policy is located. They have characters, actions and consequences or reactions, differing and sometimes competing intentions, plots and myths (McAdams 1993; Polkinghorne 1988). Carr (1986) states that ‘central to the analysis of stories and storytelling, apart from the temporal unfolding of events, is the relation among points of view on those events belonging to characters in the story, the teller of the story, and the audience for whom the story is told’ (Carr 1986: 5). Identifying, describing, naming, interpreting, understanding and explaining the narratives that are held within policies allows us to see at once, or at least reflexively, the relationships and structures at work; the intentions and actions proposed; and the ways in which policies are being used. As such, narrative theory facilitates a textual and contextual study of policies.
Both policies and stories have themes or messages considered important to tell. Education policies in the schooling sector in Australia highlight the dominant priorities, and reduce to a single point (the child), the consequences of education policies and practices. ‘The child is the centre of public schooling. … The child does not exist for the education system; the education system exists for the child’ (State of Victoria, 2000a: 22). It can be argued, and indeed policy makers intend, that what happens to the child during the compulsory years of schooling and immediately beyond, is a result of polices and practices advocated by governments at both state and federal levels. The debates and critiques that surround the issues of literacy and basic skills testing highlight this view of the importance (and particularly the political importance) of policy (cf Comber et al 1998).

Specific policy texts get framed as the whole story but in fact they are a part of the story – they are one proposed future. Policy narratives, comprised of plots and myths, are synthesised and played out at the point of the child. The nature of the delivery of universal education therefore is intended to reflect the intentions and priorities of policy makers and politicians. This it is argued in Chapter Four finds its genesis in the history and traditions of the provision of public schooling in Australia.

While descriptions of the nature of policies and that of the narratives used by humans to make meanings are compelling, this approach has the potential to simply describe the stories rather than to interpret the meanings that exist within them. In undertaking this study then, interpreting the way ideology is exercised has been considered important in order to develop an understanding of what is happening and why. It has been argued then, that policies are ideological statements, and policy research raises issues such as political intervention, legitimation, authority and authorial control. To facilitate a narrative policy study that does take into account these influences, Gramsci’s (1971) theory of hegemony has been employed in conjunction with narrative theory. To take Kenway’s (1990) advice, there is no attempt to synthesise Gramsci’s theory of hegemony with narrative
theory, but these theories have been applied for identified tasks. As one of
the benefits of narrative theory is its bias towards an holistic analysis, and as
Gramsci’s theory of hegemony is concerned with the ways society as a
whole structures its dominance (Kenway 1990), these two theories together
are applied to the question identified for this thesis.

HEGEMONY

The term ‘hegemony’ originates from Greek, referring to a leader or ruler
(Scruton 1982; Raymond Williams 1976). Gramsci (1971) developed a
political concept of hegemony which includes as one of its central principles
that hegemony exists not only in political and economic circumstances but
also in institutions and relationships. He saw ideology as the ‘cement’ upon
which hegemony is built. Gramsci argued however, that hegemony goes
beyond ideology, positing that hegemony focuses upon the ‘whole social
process’ (Williams, Raymond 1989: 56) in relation to the distributions of
power and influence. He further argued that hegemony does not reduce
consciousness to formal meanings, values and beliefs that a dominant class
can articulate and propagate. Instead he asserted that hegemonic
relationships saturate the whole way of living, not only political, economic
and social activities, but the ‘whole substance of lived identities and
relationships’ (Williams, Raymond 1989: 57). Raymond Williams has
interpreted Gramsci’s (1971) meaning of hegemony as being so pervasive
that what is viewed as specific systems, whether they are social, cultural,
educational, economic or political are seen as ‘commonsense’ rather than as
domination by one group over another (Williams Raymond 1989).
Hegemony, in Gramsci’s sense then, is usually taken to mean the capacity
of ruling classes to instil their values into subordinate classes and to turn
these values into the “commonsense of the epoch”’ (Miliband 1994: 11). It
therefore refers to a general concept of political predominance (Williams,
Raymond 1976).

Gramsci (1971) presented an analysis of the relationship between culture
and economy, rejecting the form of historical materialism which took the
view that social and cultural factors were determined directly and mechanistically by underlying economic structures. He reformulated this notion about economic structures, into a view that allowed for the influence of human efforts, (whether by an individual or a group), in altering events of history. Underpinning Gramsci’s concept of hegemony is the explanation of how social and economic systems can maintain their dominance even when the hold can be identified to belong to one group over another. Gramsci (1971) describes hegemony as comprising

the “spontaneous” consent given by the great masses of the population to the general direction imposed on social life by the dominant fundamental group; this consent is “historically” caused by the prestige (and consequent confidence) which the dominant group enjoys because of its position and function in the world of production (Gramsci 1971: 12).

Hegemony then, is a concept that deals with the issue of power, but hegemony is not maintained only by economic power or physical force but by the persuading of other groups and individuals to accept the system of beliefs belonging to the dominant group, and to share their social, moral, and cultural values (Bullock and Woodings 1983; Williams, Raymond 1976). That is, consent to an hegemonic position has to be developed and maintained; it cannot be taken for granted or assumed: ‘hegemony is never closed’ (Marginson 1997: 25). Therefore, although the support for dominant interests occurs, it is never guaranteed and is regularly challenged.

Gramsci (1971) also notes that within a concept of hegemony there are mechanisms put in place to ensure compliance to the requirements of dominant interests, should consent not be maintained. He states that hegemony comprises

the apparatus of state coercive power which “legally” enforces discipline on those groups who do not “consent” either actively or passively. This apparatus is however, constituted for the whole of
society in anticipation of moments of crisis of command and direction when spontaneous consent has failed (Gramsci 1971: 12).

The concept of hegemony includes cultural as well as political and economic factors, and this is important in democratic societies, because the legal and political institutions provide a framework for the provision of consent and the process of legitimisation of certain hegemonic forces. Raymond Williams (1976) summarises the idea of consent as a critical component in the concept of hegemony stating

the idea of hegemony in its wide sense, is then especially important in societies in which electoral politics and public opinion are significant factors, and in which social practice is seen to depend on consent to certain dominant ideas which in fact express the needs of a dominant class (Williams, Raymond 1976: 118).

As such, society’s institutions can be considered to gain acceptance or consent to a system of meanings, assumptions, and values through using the legitimate processes of that society. These systems have the capacity to shape what things mean, and therefore what reality is for the majority of people within a given culture or group, and achieved with their consent. As Raymond Williams (1989) states, ‘it is a lived system of meanings and values – constitutive and constituting – which as they are experienced as practices appear as reciprocally confirming’ (Williams, Raymond 1989: 57). Therefore, hegemonic practices can be considered to be successful when that which is produced is an unquestioning attitude to situations that see those circumstances accepted or taken for granted.

Sharp (1980) states that hegemony is successful ‘when subjects identify themselves within limits defined by hegemonic meanings and operate unconsciously, via their ideological practice, within premises which both derive from and help to reproduce the status quo’ (Sharp 1980: 103, emphasis in the original). Alternatively, as Bourdieu (1977) states ‘the most
successful ideological effects are those which have no need of words, and ask no more than complicitous silence’ (Bourdieu 1977: 188).

**The Hegemonic Role Of Schools**

Gramsci saw intellectuals as important agents for the maintenance of a social system (Bullock and Woodings 1983). Drawing on Gramsci, authors have commented upon schools’ capacity to reinforce hegemonic forces (cf Apple 1982b; Connell, Ashenden, Kessler and Dowsett 1982; Giroux 1981; Kenway 1987; Williams, Raymond 1980; Willis, P. 1977). The hegemonic role of schools is narrated in various ways, as the following summary illustrates.

Raymond Williams (1980) notes that educational institutions such as schools are the ‘main agencies of the transmission of an effective dominant culture, and this is now a major economic as well as a cultural activity; indeed it is both at the same moment’ (Williams, Raymond 1980: 37). Dwyer, Wilson and Wyn (1985) draw on Gramsci (1971) to highlight the context of schooling and the contribution it makes to ‘maintaining the ideological and commonsense understandings’ (Dwyer, Wilson and Wyn 1985: 19) necessary to have insights into how the economy functions and how capital is accumulated. Marginson (1997) describes the hegemonic role of schools and its links to the economy as follows: ‘the protection and extension of market relations in education helps those with prior economic advantages to consolidate their position’ (Marginson 1997: 16). Connell et al (1982) describe the ‘authority and hegemony in schools’ (Connell et al 1982: 107), referring to the social control that is exercised over students through mechanisms of discipline. They also identify the ‘hegemonic curriculum’ (Connell et al 1982: 120) as another mechanism of social control. They do this by referring to the hierarchy of knowledge that is the backdrop to different types of learning: ‘organizing the school around the appropriation of academic knowledge has the effect of marginalizing other kinds of knowledge. It is important to recognize that this marginalizing is done by kids and parents as well as teachers’ (Connell et al 1982: 120).
Singh (1990) identifies the nature of curriculum materials prepared for use by students as having an hegemonic role to play, suggesting that curriculum materials ‘do not only provide justification for the activities and prerogatives of powerful interests. They also help to form ideological support for the social position of these groups by legitimising their views among broader sections of society’ (Singh 1990: 12).

Connell et al (1982) identify that the organisation of learning as an individualistic and competitive activity, is central to the ongoing maintenance of hegemonic relationships through the schooling system. In this context, Connell et al (1982) argue that formal accreditation of qualifications serve to meet competitive interests. Marginson (1997) concurs with this interpretation of hegemonic forces at play through schools. He has noted that the dominant norm or standard of performance in Australian education has been the academic curriculum and that the common process of comparison has been ‘the tools of academic competition’ (Marginson 1997: 136). He has observed that for students to succeed they need ‘to conform to the orthodox academic requirements’ (Marginson 1997: 136). Further, Marginson (1997) has stated that it is ‘through educational competition, and the techniques for teaching, measuring, testing, grading, ranking, arranging and selecting students’ (Marginson 1997: 136), which are integral to ensuring competition, that schools are able to maintain hegemonic relationships. He has observed that what becomes universal is ‘not the accomplishment of the hegemonic curriculum, which [remains] confined to a few, but the cultural authority of that curriculum’ (Marginson 1997: 136, emphasis in the original).

The theory of hegemony in concert with the role of schools and their associated educational policies and practices, therefore demonstrates the embodiment of specific values, purposes and meanings, which are neither apolitical nor ahistorical in nature. These, it is argued, are important to examine as they provide a basis for determining some of the underpinning assumptions and forces of influence that are operating in the Australian
public schooling sector, and hence inform our understandings of the meaning of public schooling in the 21st century.

**Using Language To Construct Hegemony**

It is asserted here that one way hegemony is maintained is through the use of language and stories. Exploring this sets the stage for discussions later in the thesis, particularly in Chapter Five. This part of the chapter has been informed by the work of Kenway (1990), Knight, Smith and Sachs (1990), Laclau (1975, 1977) and Mouffe (1979, 1983, 1993). These authors have emphasised the discursive construction of hegemony. While Foucault (1972) has focused upon the discursive construction of power, in considering how language is used to construct hegemony, suffice to note here that there are a number of points of commonality between the work of Foucault and that of Gramsci (cf Kenway 1990; Mouffe 1979). Foucault however, was not a neo-Gramscian, and this is not to suggest a merging of their theses. Both Gramsci and Foucault however took non-reductionalist and non-economic approaches to their work (cf Kenway 1990; Mouffe 1979).

Hegemony for Gramsci (1971) and power for Foucault (1980) are regarded as both complex and diffuse, and where theories of dominance and subordination are proposed. Both Foucault and Gramsci have used history as a starting point for developing their major theoretical concepts (cf Bullock and Woodings 1983). Gramsci (1971) and Foucault (1972) saw knowledge as central to power relations. In this thesis though, the focus has been upon using Gramsci’s concept of hegemony (1971). Given the aforementioned characteristics of public policies, and the forthcoming discussion in Part II, which begins with outlining some of the history and traditions of public schooling in Australia, the work of Gramsci in particular, has been considered a useful analytical tool.
Constructing Hegemony - Ideology And Language

It has been argued earlier in the chapter that it is through stories and therefore through language and discourse that people interpret and understand the meanings of their experiences. As hegemony is a process that is never closed, the use of language, discourse and stories are therefore implicated in the construction of hegemony. While Geertz (1973) and Ricoeur (1986) have argued that there has been little attention given to how ideology functions and how it is discursively expressed, both Habermas (1971) and Giroux (1990) have commented upon the way language is implicated in the formation and maintenance of ideologies. Habermas states that language is ‘a medium of domination and social force. It serves to legitimate relations of organised power’ (Habermas in John Thompson 1981: 82). Habermas argues that the legitimation and institutionalisation of power relations occurs through the use of language and as such ‘language is also ideological’ (Habermas in John Thompson 1981: 82). Foucault (1972) has observed that discourses ‘systematically form the objects about which we speak’ (Foucault 1972: 49). Giroux (1990) takes the view that ‘ideologies inscribed in language govern the construction of meaning, authority, and subjectivity; these ideologies offer different possibilities for people to construct their relationships to themselves, others, and the larger reality’ (Giroux 1990: 367).

Discourses occur in conversations and here conversations are considered as the use of language (either in text, speech or symbols) passing to and fro between people and suggesting a process of transaction and interaction. It is argued here though, that discourses can be considered as ‘double-edged swords’: discourse can be one of the ways we can make meaning with each other, but in doing so, that meaning-making may simply reinforce relations of dominance. This is consistent with what Foucault (1972) has described as the ‘constructing’ nature of discourse. He describes discourse as having the capacity to define, construct, and position people (Foucault 1972), and uses the term ‘discourse’ to identify the nexus between power and knowledge. The social production of meaning and the ways relationships of power are
produced and maintained, for Foucault (1972, 1980) occur though discourse. For Ricoeur (1984) the discursive act becomes meaningful at the hands of the reader.

Gramsci (1971) viewed ideology as an action or a social practice that he has variously referred to as ‘systems of thought’ or ‘conceptions of the world’. He argued that these could take the form of commonsense or could be systematically thought out philosophical positions. Here, commonsense can be considered to be the ‘accumulated popular knowledge, or the thought which is embodied in everyday living’ (Kenway 1990: 177). Kenway (1990) argues that the process of gaining ideological consent to an hegemonic position (Gramsci 1971), occurs through processes of debate, persuasion and discourse, where ‘social groups and movements all seek to absorb and appropriate elements of the other’s discourse’ (Kenway 1990: 179). She continues by stating that ‘interdiscursive skill is one factor amongst many’ (Kenway 1990: 179), that enables the achievement of hegemony.

The importance of ideologies, ideological struggles, commonsense and intellectual and moral leadership are necessary then, for the operation of hegemony (Gramsci 1971) Achievement of consent to an hegemonic position occurs through the leadership of a group of people who manage to ‘articulate its discourse to the overwhelming majority of ideological elements characteristic of a given social formation, in particular the national-popular elements which allow it to become the class expressing the national interest’ (Mouffe 1979: 195). The concept of the ‘national-popular’ used by Mouffe can be considered to align with notions of ‘commonsense’, which are characterised by spontaneity and can be contradictory in form (Kenway 1990). Gramsci (1971) asserts that commonsense is a primary site of ideological struggle that is open to a range of views, and is always in a state of development. Popular thought therefore is a place where ideological intervention occurs.
Of particular use to interpreting the nature of the policies advocating the widespread or ubiquitous use of digital technologies in schooling is Mouffe’s (1979) observation that Gramsci (1971) rejected the traditional division between philosophy and commonsense (Mouffe 1979). She states that

Gramsci shows that both [philosophy and commonsense] express, at different levels, the same “conception of the world” which is always the function of a given hegemonic system expressed in the whole culture of the society (Mouffe 1979: 8).

She suggests that there is a continuum of understanding or a ‘definition of reality’ where ‘philosophy constitutes the highest level of elaboration and through which the intellectual and moral leadership of the hegemonic class is exercised’ (Mouffe 1979: 8). Mouffe (1979) asserts this is what gives hegemony its political nature. She indicates that struggles at the level of philosophy are necessary in order for the commonsense of the masses to be appropriated. It is at the level of philosophy that the policies for the Australian public schooling sector operate.

Laclau (1975) has argued that

when a familial interpellation, for example, evokes a political interpellation, a religious interpellation, or an aesthetic interpellation, and when each of these isolated interpellations operates as a symbol of the others, we have a relatively unified ideological discourse (Laclau 1975: 102).

Knight, Smith and Sachs (1990) make a similar point (drawing from the work of Mouffe 1979). It is the ‘structuring continuity across the texts that constitutes the “hegemonic principle”’ (Knight, Smith and Sachs 1990). It will become apparent in Part II how this is achieved in the policies advocating the use of digital technologies in Australian schooling.

Giroux (1990) has reminded us however, that language is not fixed and does not have a cemented correspondence with reality; it does not have a universal claim to truth or meaning. This view accords with Gramsci’s
assertion that hegemony is the outcome of ideological struggles which lead to meaning making. Mouffe (1979) argues that Gramsci (1971) understood that ideological struggles were aimed at maintaining a dominant position, and that these ideological struggles occurred through processes of ‘disarticulation and rearticulation’. She argues that the objective of ideological struggle is not to reject the system and all its elements but to rearticulate it, to break it down to its basic elements and then to sift through past conceptions to see which ones, with some changes to content, can serve to express the new situation. Once this is done the chosen elements are finally rearticulated into another system (Mouffe 1979: 192).

This is a similar argument to that put by Edward Bruner (1986) who suggests that narratives operate as living processes and over time they become refigured or reauthored. Narratives then are formed and reformed, but this process can be one of struggle (Kenway 1990). As such, it is argued that hegemony is a ‘discourse of discourses’ (Laclau 1983: 118), where stories can be used to either further hegemonic conditions or can be used as counter-hegemonic strategies. As Apple (1982b) has observed, ‘the control of the cultural apparatus of a society, of both the knowledge preserving and producing institutions and the actors who work in them, is essential in the struggle over ideological hegemony’ (Apple 1982b: 16). Heeding Apple’s advice, in Chapter Six counter-hegemonic stories for the future are proposed.

Using Narrative Theory And Hegemony

This study has taken an interpretative research approach and as such narrative theory has been used throughout this thesis. This is because narrative theory foregrounds what people have to say either verbally or through the use of artefacts. Narrative theory includes the processes of narrative making and the products of those processes. Narrative studies use stories as the object that is being investigated. These stories as sources of data are often collected through interviews, or as is the case here, through research conversations (Herda 1999). Research conversations (which are discussed further in Chapter
Three), provide direct insights from people about their experiences, opinions, feelings, attitudes, motivations, and knowledge. This thesis has also used artefacts from various sources (which are also outlined in Chapter Three), thereby utilising a breadth and depth of data so that issues can be explored and interpreted. Narrative theory iterates the importance of ‘context’ and allows for the research of social processes.

Roe (1994) identifies four benefits of narrative theory for studying policies. He suggests that the application of narrative theory privileges the use of texts; recognises the place of uncertainty and complexity in reading ‘texts’; recognises the capacity for ‘texts’ to have multiple ‘readings’; and recognises the existence of multiple voices in ‘texts’ (Roe 1994). The presence of multiple voices in policy discourses and the ability to read policies in multiple ways adds to the complexity of this study. As Taylor (1997) states, ‘there is no single reading of policy texts’ (Taylor, S. 1997: 26). Barry and Elmes (1997) justify the use of narrative theory in strategic planning (which is required for policy making), because ‘narrativity emphasizes the simultaneous presence of multiple, interlinked realities, and is thus well positioned for capturing the diversity and complexity present in strategic discourse’ (Barry and Elmes 1997: 430). And as Ricoeur (1978b) argues, because it is possible for multiple meanings to be made from words and sentences, these require interpretation. This study therefore includes interpreting the policies and stories that are used to advocate the use of digital technologies in Australian school education, to aid in answering the central question identified for this thesis.

It has been argued that viewing policies through both the lens of hegemony, along with that of narrative theory, assists the process of interpreting public policies (cf Roe 1994; Luke, A. 1997a). Drawing on his earlier work, Allan Luke (1997a) describes policy texts as ‘narratives that describe and position human subjects as actors and effected entities within chains of events and actions’ (Luke, A. 1997a: 3). Considering the messages both hidden and obvious, held within these policies then, provides insights into the possible
implications there may be for those for whom the policies are intended. To make obvious the assumptions and rationale underpinning these policies is important. Making clear the assumptions and rationale of the policies advocating the ubiquitous use of digital technologies in schooling, also helps to provide a framework, or a map of the territory within which the policies’ actions proposed, are intended to take place. To draw on the suspense writer Nicci French (1997), who summarises this point in The Memory Game:

perhaps I can enable you to turn them into a narrative that will make sense to you. That may help you to take responsibility for your life, even, perhaps, to gain increased control over it (French 1997: 71).

Using the concept of hegemony with narrative study then, can help us to interpret, understand, explain, and to possibly anticipate the variety of possible consequences of educational policies. Understanding the policy directions being espoused may enable those working in school education to better understand what actions are required, and to identify and achieve preferred purposes and options. That is, knowing what is proposed, and what is going on and why, can help in the decision-making processes determining what to do about various policies.

Narrative theory has been used to undertake this study as it facilitates the development of interpretations, understandings and explanations about the texts (both physical and metaphorical). In narrative theory, the context is considered important and here, locating the policies within a context has been important for facilitating an understanding of the actions occurring in fields outside of school education and their impacts on school education. Narrative theory does not build a wall between the objective and the subjective but provides instead the ability to ‘integrate dialectically the empirical, interpretative and critical dimensions of a theoretical orientation that is directed toward practical activity’ (Bernstein, B. 1983: x). In this way, it provides for using stories and viewing them from different perspectives to address practical issues. This allows for the development of a more holistic view of the problematics that are identified and being tackled.
Roe (1994) has advocated the use of narrative theory where complexity and uncertainty exists in studying policies. It will become apparent in the chapters ahead that advocating the use of digital technologies in Australian public schools is fraught with philosophical uncertainties and complexities. This makes the use of a positivist paradigm difficult and therefore provides justification for undertaking this sort of study.

There are characteristics that stories and policies share, which makes narrative theory useful. Both policies and stories rely on implicit knowledge to be understood; actions that are constructed to take place, do so within defined contexts; both require an understanding of the structures used for expression and often involve the provision of lessons to be learned. Viewing policies as stories reflects the inseparability of thought and action; it is the dialogue between teller and audience. Narrative theory also allows for the legitimate process of reauthoring stories. That is, texts are not considered as devoid of humanity and the construction, interpretation, reinterpretation and rewriting of stories can be undertaken under the umbrella of narrative theory. For the purposes of this thesis then, narrative theory provides considerable utility.

The concept of hegemony has been used alongside of narrative theory so that we do not accept the words of the policies that count as ‘official knowledge’ (Apple 1993), without question. This is in recognition of the material conditions within which these policies are developed and implemented. This too, is to act on Apple’s (1994) warning to ground our studies and our theorising in the realities of everyday life. Stories then have been used with the concept of hegemony to observe the activities public schooling sector policies propose, and to aid in debating what public schooling means in Australia in the 21st century, with its past tradition of free, compulsory and secular schooling, and given the present public schooling sector policies that are urging the ubiquitous use of digital technologies. It is with this as the theoretical backdrop, that we now can turn to consider the methods used in this study.
CHAPTER THREE

RESEARCH CONVERSATIONS AND POLICY TEXTS

This chapter builds on the theoretical basis for the thesis that was presented in Chapter Two, by outlining the methods used to undertake this study. To reflect the dynamic and inherently social and cultural nature of schooling, narrative theory together with the concept of hegemony, have been used. There has been an emphasis in this study, on the researcher being involved in conversations that reflexively have provided opportunities to develop interpretations, understandings and explanations. This research has been approached from different perspectives, using the texts gathered from, and by generating texts through, conversations with different levels of the schooling community. This chapter, in concert with the previous two, sets the stage for Part II of this thesis.

DESIGN OF THE STUDY

Polkinghorne (1988) states that ‘the activity of meaning making is not static, and thus it is not easily grasped’ (Polkinghorne 1988: 7). In recognition of this, a multifaceted approach has underpinned this study. Data generated through ‘research interviews’ (Mishler 1993) and ‘participant observations’ (Hammersley 1990), which together are referred to as ‘research conversations’ (Herda 1999), have been collected though audio and video recordings, and transcribed. These texts, along with artefacts, particularly official documents that are publicly available, have been used in this study.

Interpretative research approaches such as that afforded through narrative theory, make use of interviews as one of its predominant data collection techniques (cf Lindlof 1995). ‘Participant observation’ is a technique of data collection most often used by ethnographers, and employed in some non-positivist educational research (cf Bauer and Gaskell 2000; Goetz
and Le Compte 1984). ‘Participant observation’ is used to elicit definitions of people’s reality and the ways they view the world. It involves the researcher participating in the ongoing activities of people, by taking field notes on the spot or soon after. As such, throughout this study a personal reflective journal complemented with photographs, audio and video recordings have been kept by the researcher.

In addition to the conduct and transcription of ‘research conversations’, official public documents including Parliamentary Hansard, government budget papers, government and departmental policy documents and web-based government information have been systematically collected and examined. Extracts from the policies reviewed and the transcripts of the ‘research conversations’ (Herda 1999) are woven throughout this thesis, and are used to tell their own stories. Appendix Nine provides a summary list of the characters directly quoted in the thesis.

An aim of the design of this study was to ground the research in the world of lived experiences (Denzin and Lincoln 2000), by developing an understanding of each contribution made by the people with whom ‘research conversations’ (Herda 1999) were held, and by interpreting the artefacts collected. This has provided a multi-dimensional picture. The outcomes from these research methods were considered as something like a series of holograms, used to see ambitions and actions over time, and in many dimensions. These research methods allowed for ‘beholding the world not univocally but simultaneously through a set of prisms each of which [caught] some part’ (Bruner, J. 1986: 26) of the whole. Such an approach was undertaken in order to determine how particular perspectives, methods and ‘truths’ were created, chosen, developed and implicated (cf Apple 1986; Luke A. 1995; Wexler 1987). Thus the use of stories gathered from different sources has been undertaken and these have been interpreted using narrative theory and the concept of hegemony (as was outlined in the previous chapter).
**Timeframe**

The research for this study was conducted from 1998 to 2001 with the overall timeframe pertinent to the gathering of official documents being those released between the years 1997 and 2001. Stories have been gathered in relation to and from, ‘face-to-face’ as well as distance education schooling. Two sets of ‘research conversations’ (Herda 1999) were conducted: one set was gathered from individual adults and small groups of students and parents who collectively could be considered to constitute a ‘vertical slice’ of the field of school education, along with perspectives provided by officers from within the ICT industry sector. These conversations (referred to as ‘Research conversations 1’ in the table below), were held between June 1999 and July 2000. The second set of ‘research conversations’ (Herda 1999) was held on a monthly basis between October 1998 and October 2001. (These conversations are referred to as ‘Research conversations 2’ in the table below). This set of conversations was conducted with a small group of distance education specialists, via teleconferences. In this set of research conversations I acted as a ‘participant observer’ (Hammersley 1990).

State, territory and commonwealth budget data were gathered using the spans of the financial years from 1998-1999 to 2001-2002. Information was collated from these documents and is summarised in Appendices Three, Four and Five. Policy documents advocating the use of digital technologies in schools, systematically gathered over the period of 1997 to 2001. Appendices One, Two, and Eight document the major policies gathered. The use of these documents however, is separate to the historical records reviewed for the preparation of Chapter Four of this thesis.

Table One (over the page) summarises diagrammatically the timelines applicable to each of the data collection techniques used in this study.
While this study has focused on policies advocating the use of digital technologies in schools since 1997, it is noted that policy development concerning the use of computers in schools has been occurring under a variety of labels for nearly twenty years. Education Queensland (for example) released a ‘Computers in the Curriculum Policy Statement’ in 1983 (cf Education Queensland 1999a). Like Queensland, government education departments around Australia have been developing policies addressing the role of computers in schools since the 1980’s. The review of policies used for this research however, has focussed upon those policies generated since 1997.

**Research Conversations**

Both the ‘interviews’ conducted and the ‘participant observations’ undertaken, are described here as ‘research conversations’ (Herda 1999). The phrase ‘research conversations’ has been appropriated from the work of Herda (1999) who draws upon Gadamar’s (1975) views of ‘conversation’, which he defined as the processes of people understanding each other (Gadamar 1975). Conversations have been used in this study to generate research data with the overall purpose of developing understandings about the central question identified for this thesis. As such, both the ‘interviews’ and the ‘participant observations’ have been referred to as ‘research conversations’. A more detailed rationale for this approach follows.

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*Table One: Overview of research timelines*
Education Research

Lingard and Blackmore (1997) argue that education research is characterised by its diversity, complexity and multidisciplinary character. It focuses upon ‘the complexities of educational policies and practices from the micro to the macro and sits in “tension” with the education profession and educational policies and practices’ (Lingard and Blackmore 1997). These authors argue that the complexity of education research has been compounded by the changing nature of the culture within which such research operates, given the recent introduction of the use of the Internet in the provision of education.

‘Research’ in this study has been assumed to be a communal act where the use of language has been considered important for achieving the meaningful interactions that are required with the research approaches used (Herda 1999). Since the use of stories and therefore language and discourse have a central place in this research, then the practice of research here, is considered to be a textual practice (Usher, R. 1996), where, in this study, ‘textual practices’ are interpreted broadly and include verbal conversations that have been tape recorded and then transcribed into written texts.

‘Conversation’ in educational research

Conversation is a basic form of human interaction (Kvale 1996), and one of the ways stories are told is through conversations; they are speech events where the purpose is focused upon the notion of transaction or exchange (cf Bruner, J. 1986; Mishler 1993). This is to highlight that conversations as speech acts occur in social contexts. Transactions carried out in conversations then are premised upon mutual assumptions about how the communication should be undertaken (Bruner J. 1986; Mishler 1993). That is, in conversations we each orient our language to the interpretative contexts within which we find ourselves and construct the language we use, to fit those contexts. ‘Research conversations’ (Herda 1999) were considered here as the ‘construction sites’ (Kvale 1996) for research data.
At the ‘construction sites’ created by ‘research conversations’ (Herda 1999), there is interdependence between human interaction and data production. Mishler (1993) argues that there can be no such thing as an objective observer when undertaking interpretative research, as those taking part in ‘research conversations’ (Herda 1999) are the constructors of research data. This means that the nature of the data generated through ‘research conversations’ (Herda 1999) is not neutral and is therefore subjective (Kvale 1996; Herda 1999). These principles have been recognised as underpinning this research.

In addition, ‘research conversations’ (Herda 1999) can be considered as professional conversations where discussions occur on mutually agreed upon topics or themes, at predetermined times. These activities can be considered akin to what Burgess (1988) refers to as ‘purposeful conversations’. These conversations require the use of language, where the aim is to establish meanings that are jointly understood. The meanings of the questions and answers held within these conversations are contextually grounded (Mishler 1993).

As it is through conversations that those involved may develop new understandings or insights (Kvale 1996), a purpose of the ‘research conversations’ (Herda 1999) in this study, was to facilitate the interconnections between events or texts, and through the researcher’s and the participants’ interpretations of these, to foster our respective understandings of those events and texts (cf Herda 1999). These conversations then had a purpose that went beyond the spontaneous interchange of views that characterises everyday conversations. Each research conversation then has generated stories, and these together with the official texts collected, have contributed to building interpretations and understandings of larger pictures than those afforded by each individual story.
Research interviews and participant observation as research conversations

Mishler (1993) argues that interviews are primarily linguistic occurrences, and the main characteristic of interviews is discourse, by which he means ‘meaningful speech between interviewer and interviewee as speakers of a shared language’ (Mishler 1993: 10-11). He notes that ‘the discourse of interviews is constructed jointly by interviewers and respondents’ (Mishler 1993: ix), and as such is facilitated through discourse, thereby allowing for an interplay between theory and practice within the research.

As indicated earlier, narrative theory uses interviews as a predominant method for data collection, and since stories are generated through these speech events, then ‘narrative interviewing is based on the premise that the events of our lives, and the events of groups and organisations, are communicated through storytelling’ (Lindlof 1995: 172-173). Therefore, rather than being considered as a one-sided event (cf Mishler 1993), an interview can be considered as ‘an interview, an interchange of views between two persons conversing about a theme of mutual interest’ (Kvale 1996: 2, emphasis in the original). Through their respective emphases on ‘interviews’ as places where joint constructions of meaning are developed, Mishler’s (1993) and Kvale’s (1996) interpretations of ‘interviews’ and Herda’s (1999) conception of ‘research interviews’, are similar.

Participating in the conversations with school level distance education specialists via monthly teleconferences, has been described here ethnographically, as ‘participant-observation’. Using this method of data collection depends on the use of conversations. Lindof (1995) describes the role of a ‘participant observer’ as one who observes ‘conversations and other forms of speech that occur naturally in a scene’ (Lindof 1995: 163). Participant observation then, like interviews, draws on the use of conversations for the generation of data.

As a participant observer, I ‘observed’ by listening to the conversations, participating in the discussions and by later reflecting upon the
conversations undertaken in the teleconferences. A characteristic of teleconferences is that they do not have the benefit nor the distraction of being able to see the other people as they speak, and therefore attention is focussed on listening to and interpreting the verbal information being provided. It is not uncommon then in teleconferences for questions of clarification about intentions, to occur between the participants. These teleconferences, along with the policy documents and budget papers have provided a contextual basis, over time, for this study.

‘Research conversations’ then, as do ‘research interviews’ and ‘participant observation’, place an emphasis on talking and listening to people about how they interpret, understand and explain their world and their experiences of their world. To construct a ‘research conversation’ (Herda 1999) that allows for the exchange of ideas requires the participants to feel that they are able to contribute to the conservations. Irrespective of whether this is achieved through a ‘research interview’ or through ‘participant observation’, it requires a sense of mutual trust, the ability of the researcher to listen to the stories being told, and the exercise of respect for what the participant is revealing (Clandinin and Connelly 2000). These conditions highlight the important role of the researcher, both in conversations held ‘face to face’ in ‘one on one’ and small group situations, and in ‘participant observation’ via the use of teleconferences.

**Role Of The Researcher In Research Conversations**

Collecting stories through research conversations generated either through ‘interviews’ or through ‘participant observation’ requires the researcher to establish conditions that are as comfortable as possible for meaningful talk to occur. Both Casey (1995) and Herda (1999) suggest that such an approach requires reconstructing the relationship between the researcher and the subject of the research so that the researcher moves away from a position of a ‘neutral observer’ to that of being engaged in a relationship (albeit temporarily), with the people with whom the themes or topics of the research are being discussed. To achieve this sort of relationship between
the researcher and the subject, Casey (1995) argues, requires a reconsideration of where the power lies within the research undertaking and how that is reflected in the structure of the research conversations. This requires the researcher to recognise that he or she is not accorded an elite or privileged external position from which to conduct the discussions, but requires the researcher to be conversant with the issues in order to hold meaningful, and meaning-making conversations with the participants in the research.

Accepting the views of Casey (1995) and Herda (1999), in this study then, I actively sought to engage in conversations that located me as a co-conversant, able to conduct educated and professional conversations. In my journal I maintained a record of key events and my reflections on these conversations. Some of the participants reported to me that they so enjoyed the conversations that we held, that they indicated they would have liked to instigate more such activities (cf Moyle 1999-2000).

The importance of listening
Critical to the role of the researcher, where the research methods include the use of research conversations, is the importance of listening as a research tool (Forester 1980; Herda 1999). Research conversations require the researcher to listen to the voices of the participants: to listen to them talk about their choices and constraints in their daily working lives, and to listen to how they explain their own worlds of social reality. This is to listen to their experiences; to heed their words.

Drawing on Reinharz, Michelle Fine (1994) argues that by using people’s voices as part of a research methodology is to affect the power relationships between the researcher and the participant, asserting that to listen to people is to empower them. This requires the researcher not to dominate and control the airspace but to share it, and to attend to the messages being told. As Reinharz observes,
before you can expect to hear anything worth hearing, you have to examine the power dynamics of the space and the social actors. Second, you have to be the person someone else can talk to, and you have to be able to create a context where the person can speak and you can listen. That means we have to study who we are and who we are in relation to those we study. Third, you have to be willing to hear what someone is saying, even when it violates your expectations or threatens your interests. In other words, if you want someone to tell it like it is, you have to hear it like it is (Reinharz in Fine 1994: 20, Fine’s emphasis).

In addition, people like being listened to as it legitimates their stories. Placing an emphasis on listening, and on the joint construction of meaning then (Mishler 1993), requires that the role of the researcher moves away from being an interviewer or participant observer in the more traditional sense, to being a co-collaborator.

In this study, I actively considered issues such as the time and place to conduct the conversations, and the inherent power relationships between myself as the researcher and those participating in the research conversations. The power within each conversation varied. For example, some of the senior officers such as the Chief Executive Officers (CEO’s), senior bureaucrats and political operatives demonstrated confidence in the conversations, with some actively controlling the length and extent of the discussions. Other senior officers took the opportunity to discuss problematic issues for them, and to seek my views on such matters. On the other hand, and as will be seen shortly, for the students and parents participating in this study, steps were taken to attempt to minimise the extent of the potential differences in power between them, and myself as the researcher.

Understanding the self in research

Undertaking research conversations, it has been argued, means that as researchers, we enter into relationships with those who are participating in
our research. To undertake research conversations therefore requires an understanding not only of the issues identified for discussion, but also of the ‘self’ in the research, as it is likely to influence the nature of the outcomes of the research undertaking (Drummond 1996; Herda 1999). This is to accept that ‘whether implicit or elaborated, every study of narrative is based on a particular understanding of the speaker’s self’ (Casey, 1995: 213). Berg and Smith (1988) and Mirvis and Louis (1988) have reflected upon the dynamics of undertaking studies where the researcher is located subjectively rather than objectively, and their theorising has informed this study.

Berg and Smith (1988) assert that the relationships generated through a research study should receive the same depth of examination as other methodological issues. They argue that trusting and mutually respectful relationships are more likely to provide rich data than are distrustful ones. Mirvis and Louis (1988) concur with Mishler (1993) who has argued that a researcher using interpretative approaches cannot be objective as is proposed in positivist approaches to research.

Accepting the subjective nature of the data collection used in this study, I have recognised that I am not free of values, nor ignorant of the issues which the research conversations were established to discuss. As such, as Apple (1995) explains, it is ‘difficult to divorce the person from the questions and conclusions from any research’ (Apple 1995: xv). He continues by suggesting that authors of research should not only recognise this ‘but such a relationship should be avowed, should be made public’ (Apple 1995: xv). Thus, understanding the self as a researcher is required in order to be an honourable narrative researcher. This thesis therefore requires me to disclose my idiosyncratic defining features. What follows is my story; here is my disclosure.

My story
Since 1995 I have worked on the development of a variety of digital materials for use by teachers and students throughout Australia. In
undertaking this work I developed three views or insights about what seemed to be occurring, concerning the advocated use of digital technologies in the schooling sector. The first of these was that it seemed there was an ongoing investment of larger and larger amounts of money being allocated to these policy initiatives, without there seeming to be an understanding or recognition of the recurrent rather than discretionary nature of this expenditure. I wanted to investigate this.

In 1998, for the first time in my career, I began working in the production of digital materials for use by school level distance education students. This saw me develop a second view. I thought that because distance education had a history of providing schooling mediated through the use of technologies, (initially through the use of the pen and correspondence lessons sent through the postal services, and then with high frequency (HF) radio, telephone and now computers and the Internet), that maybe there could be some lessons to be learnt from the experiences of the people working in the specific sub-field of distance education. Given that the policies advocating the use of digital technologies were emerging nationally and at a state level, one interpretation from these policies could be that every school potentially was able to become a distance education provider. In this context I thought that some lessons from the distance education specialists were possible and even useful to those in ‘face to face’ classrooms who were beginning to use digital technologies in their work. For example, for students geographically isolated from their local school there is a clear purpose for using technologies to provide schooling. These students are located too far away from a school building to physically attend a school. As such, they receive their lessons through technology-mediated means, whether that occurs by the lessons being distributed through the postal services or over the Internet. I thought it was worth looking at their experiences of technology-mediated learning, given the emerging policy priorities, to see whether their experiences of schooling could be of benefit to the broader school community.
A third view I had was that since traditionally, distance education has been viewed as the ‘poor cousin’ to ‘face to face’ schooling, that the policy developers at the state and territory levels did not seem to be establishing mechanisms through which to listen to the lessons that were available from the people working in and receiving their schooling by distance education, albeit that they were all in the same schooling sector. This too seemed worthy of research.

These three views became the ‘launch pad’ for framing and establishing this research project.

I then developed the topic of research I wanted to discuss with those in the field. I began my investigations with the topic: ‘the use of information and communication technologies for teaching and learning in Australian public schools’. With research such as this however, while the write-up of the research often appears pristine, it belies the fact that the actual research is an evolving piece of work. Over the course of the study, and as a result of the recurring nature of certain themes arising through the research conversations (discussed in Part II), the original topic became refined into the question identified for this thesis: ‘what does public schooling mean in Australia in the 21st century, with its past tradition of free, compulsory and secular schooling, and given that the present public schooling sector policies are urging the ubiquitous use of digital technologies?’

**Using Research Conversations In This Study**

It has been identified that a strength of using research conversations is that it allows for the ‘capture of a multitude of subjects’ views of a theme’ (Kvale 1996: 7). As indicated earlier, the research conversations for this study took two forms. Firstly, a series of conversations (‘Research conversations one’), were conducted between June 1999 and July 2000. These were held with people participating in both ‘face to face’ and distance education schooling, and were conducted with individuals, except in the cases of parents and students, who were met in small groups. These conversations provided a
snapshot in time. Secondly, each month, from October 1998 to October 2001, I participated in teleconferences with a group of distance education specialists. (These have been referred to as ‘Research conversations two’). This group of specialists comprised the state and territory managers of school level distance education materials units and principals of distance education schools. These national teleconferences are a part of their regular work and were not established specifically for the purposes of this research project, (unlike the aforementioned research conversations one). I participated in these teleconferences as a ‘participant-observer’ and these conversations provided an ongoing, ever-developing contextual basis for the research.

**Research Conversations With A ‘Vertical Slice’ Of The Public Schooling Sector**

It will be demonstrated in the next chapter that historically, the schooling systems in Australia have been considered as centralised and hierarchical. Alongside of this, van der Heijden (1997) has argued that organisations consist of conversations. Organisational structures, it is argued, exist in action and interaction, where the interactions take place through conversation (van der Heijden 1997). ‘To intervene in organisations is to intervene in conversations’ (van der Heijden 1997: 274). Cognisant of these views, the first set of research conversations (research conversations one), were conducted with people participating at different levels within their respective public school systems, and ranged from ‘political operatives’ to primary aged school students. A total of sixty-eight conversations were undertaken. These provided windows of experiences on the texts and actions at the time, concerning the advocacy for the widespread use of digital technologies in public schooling.

Gathering research conversations from this ‘vertical slice’ of the public schooling sector was cognisant of Parry’s (1996) view that ‘researchers from a number of different theoretical traditions have begun to recognize the value of linking the micro-level, interactional processes such as behaviours, conversations and rituals with the macro level structures of organisations’
(Parry 1996: 18). Allan Luke (1995) however, has observed that ‘many educational analyses have difficulty showing how large scale social discourses are systematically (or for that matter unsystematically) manifest in everyday talk and writing in local sites’ (Luke, A. 1995: 11). Furthermore, cognisant of Grumet’s (1991) assertion that ‘multiple accounts splinter the dogmatism of a single tale’ (Grumet 1991: 72), several accounts of the same texts and actions were collected. The design of this study then, has been underpinned with the deliberate purpose of gathering multiple views rather than a single perspective, concerning the advocacy for the widespread use of digital technologies in public schooling.

Research conversations one: the ‘vertical slice’

Twenty ‘macro’ level and forty-eight ‘micro’ level research conversations were collected. Here ‘macro level’ was broadly interpreted to refer to participants operating at a national, state or territory level, with the ability to directly influence policy development, both formally and informally. The ‘micro level’ participants were identified as those people operating within a state, territory or at the local level without a direct policy responsibility or a recognised or authorised mechanism for input into policy development. The micro level group included parents and students. When considered as a total group, the participants were deemed to constitute a ‘vertical slice’ of the field of school education in Australia. Since it has been argued that policy development in the schooling sectors in Australia is predominantly a centralised activity managed centrally, the macro level participants were considered as being at the beginning of the policy development and implementation chain, and the authors of the policies. The micro level participants were considered at the other end, or receiving end of that chain. Therefore all participants were involved either in policy development, or they were in receipt of the outcomes of policy decisions.

A summary of the categories of people involved in the conversations for this research is demonstrated in the following diagram. The numbers in brackets refer to the number of participants in each category taking part in this study.
All participants in this study were promised and have received anonymity, and so for ethical reasons the identities of the participants in both the macro and micro groups remain confidential. Throughout the thesis participants are identified by the use of initials; the initials used are not, however, the actual initials of those participants.

Macro level participants
The ‘macro’ level policy makers group comprised officers who were drawn from the elected political level, from the most senior levels of school education system bureaucracies, and from nationally oriented industrial and professional groups concerned with school education. This group included senior managers within trans-national and global private digital technologies companies. The industry people were considered to be located at the intersection of the public schooling field and the ICT industry sector as illustrated in Diagram One in Chapter One.

Participants at the macro level were identified by the researcher on the overriding principle of being as close as possible to the place where policy decisions are made. Each person in this group had contributed to Australia’s or to a state or territory’s formalised policy directions concerning the use of

Diagram Three: Summary of those participating in the research conversations
digital technologies in schools. Participants in this group were initially approached through a letter to each individual outlining the nature of the research being undertaken and inviting him or her to take part.

The categories of people identified at this macro level were ‘political operatives’, that is politicians, and political advisers. The ‘Chief Executives Officers’ (CEO’s) group consisted of officers heading public and private organisations directly involved with the schooling sector. The public sector CEO’s were drawn from either a state or territory public schooling system or board of study, and in the private sector the CEO’s included those heading Ministerial companies and trans-national and multi-national companies in the ICT industry sector. The category of ‘senior bureaucrats’ refers to officers who were located in the public sector at either the national or state levels. The category of ‘school principals’ here refers to individual principals who were contributing to national or state policy developments; and the group identified as ‘professional lobbyists’ included people working at a national level for the key organised groups of teachers, school principals and parents. It was not intended for these participants to be representative of their geographical location, it was intended instead, that across the breadth of those participating, that all states and territories and the commonwealth were covered. This was achieved.

The ‘political operatives’ group was identified as they form a part of the political decision-making processes for governments. Those interviewed in the ‘senior bureaucrats’ group were identified as they undertake activities such as contributing to ‘white’ and ‘green’ papers, published policies, preparing cabinet submissions and actively taking part in departmental policy decision-making as a member of the departmental executive team. Lobbyists for teachers, school principals and parents were identified as they provide input into policy development at state and national levels through their representative bodies. Senior personnel working in private national and multinational companies were identified because they directly negotiate
with senior government officers, political operatives and can influence state and national policy directions.

School principals were invited to participate in this study at both the macro and micro levels as they can be considered to be the nexus between the departmental policy making and the local level implementation of policies. Three school principals participated at the macro level. Two of these principals (one a primary principal and the other a secondary principal) had input into national policy decision-making processes. The third was a principal of a combined primary and secondary school of distance education. This principal was involved in the policy decision-making processes at a state level.

All these research conversations were held in a place familiar to the participant with the conversations conducted in the participants’ offices or in another private place, at their worksite. The selection of locations for these research conversations was in recognition of Fine’s (1994) advice about the importance of listening. Drawing on Reinharz she stated that ‘if you want to hear it, you have to go hear it in their space, or in a safe space’ (Fine 1994: 20). These research conversations then, were conducted in spaces familiar to the participant rather than to the researcher.

Micro level participants
At the ‘micro’ level, forty-eight research conversations were conducted with twenty students, ten parents, five teachers, three volunteers working within the public schooling sector; five school principals, two public online content developers and three individuals working in private digital technologies businesses. These conversations were conducted with students undertaking their schooling through distance education; parents of distance education students; teachers and school principals in both ‘face-to-face’ and distance education schools implementing the policies; volunteers participating working with families whose children were enrolled in the public schooling sector; and individuals working in public sector digital materials
development and private digital technology businesses. These participants were drawn specifically from two states of Australia. The two states chosen are distinctly different in their population demographics, geography and political context. This approach was undertaken to provide multiple viewpoints to federal, national, state and territory policy directions and to gain insights from different micro level contexts.

These micro level participants were identified by the researcher on the overriding principle that each individual was directly using or providing digital technologies for schooling purposes. Permission was required from the relevant state and specific school authorities to undertake this level of the research. This was sought and received. All micro level participants were then approached through the use of a letter. In the case of the student and parent participants, teachers distributed letters requesting involvement in the study on behalf of the researcher. This reflected bone fide support for the research study by the schools involved. Students were required to have the written permission of one of their parents or a guardian, in order to participate in the research.

Distance education students and their parents were asked to participate as they were beginning to use digital technologies to access their schooling from a location remote from the school, and hence were able to provide insights into how this occurred and why. Conversations were held with personnel working in small, digital technology businesses as they provide technology support to schools, and/or develop digital teaching and learning materials for use in schools. That is, they are directly involved in the private/public nexus that exists with the use of digital technologies in schools.

Teachers and principals participating at the micro level of the research were met at their school, in a private place. One family consisting of both parents and their two teenage children, due to their unique and remote location, were met as a group at their home. Another husband and wife also were met
in their home. The other students and parents were met in small groups, while attending school camps. The researcher visited them at their respective campsites.

In summary then, together the macro and micro level conversations have provided a ‘vertical slice’ of insights from a variety of perspectives about the advocated use of digital technologies in Australian schools and systems. This approach has allowed for interpretation of the stories from national, state and local perspectives. Collectively, these conversations provide depth and richness to the policy and budget texts (which will be discussed shortly). They provide both confirming and alternative voices to the various artefacts collected.

Conducting The Research Conversations With The ‘Vertical Slice’ Participants
The conversations with all adults except the parents and students were conducted on a one to one basis. Conversations with parents and students were conducted in small groups. This was in recognition that a power differential could be perceived to exist between the parents and students and myself, as the researcher (cf Casey 1995; Herda 1999; Lindof 1995; Mishler 1993). To offset that possibility the parents and students were met in small groups rather than in a one to one setting. All the conversations were tape recorded and transcribed. Extracts used in this thesis are drawn from the pool of transcripts of these conversations.

Adults (except parents)
Conversations with the adults were conducted on a one to one basis using an unstructured approach. Each conversation commenced with a question asking the participant to outline his or her work experience background leading up to where he or she was located at the time of the research conversation. This was followed up with an outline of the topic of the research: ‘what are your views about the use of information and communication technologies for teaching and learning in Australian public schools?’ This question was presented both verbally and in writing. The
participant was then invited to respond with whatever came to his or her mind from reading and listening to the topic outline. After this, the nature of the discussions was conversational, with both the researcher and the participant discussing and debating the issues under discussion. Each conversation was about an hour in duration.

Parents
The conversations with the parents were conducted in three small groups, and in one case as a family group comprising both parents and their two teenage children. The parents each had children using digital technologies in their learning and were undertaking distance education using a variety of technologies. Each parent in each group was asked to provide brief contextual background information about him or herself. Consistent with the approach used with the other adults, they were then presented with the topic of the research in both written and oral formats. They were invited to respond with whatever comments they wished to make. The conversations then continued from these beginnings. Although an hour session was allocated for each group, in each case these discussions lasted longer than an hour. The longest discussion was two and half hours.

A family group
One research conversation was held with a family group consisting of two parents and two teenage children. Their home location is remote and isolated and so I travelled to their home to meet with them. The research conversation was conducted in a manner similar to that used with the other parents. That is, each parent and student was asked to introduce him or herself and to provide some brief contextual background information. After I provided an outline of the research topic, each person was invited to respond, which opened the door for the conversations to occur. This discussion lasted for almost two hours.
Students
Conversations with the student cohort of this research project (excluding the aforementioned two students in the family group), were conducted in three small groups consisting of between five and seven students in each group. These conversations were held in a private place at their respective school camps. I was aware that the students might have been conscious of a difference in power between myself as an adult researcher and them as primary and junior secondary school aged students. As an adult, as a researcher, and looking like a teacher, I was concerned that there may have been some expected institutional authority relations expected of me, which could put the students into a subordinate role (cf Luke, C., de Castell and Luke, A. 1989).

To counteract this, several strategies were used. The conversations were held in small groups, and were semi-structured. This was to provide the students with support for each other, with the sense that the activity they were undertaking was consistent with the nature of the other activities conducted at the school camps, and through this provide a sense of security. That is, the conversations were scheduled into the camp program and were structured to be similar to a task the students might ordinarily undertake in a camp activity. The intention behind this was to provide a recognisable and safe context within which the conversations could take place, and to make the activity enjoyable for them.

As the groups were small, the conversations with the students occurred with the students and myself sitting together around one of the tables in a private room of the school camp site. The purpose of the structure of the conversation and the location for it to be conducted were to reduce the possibility of being intimidating to the students, by talking with the ‘adult researcher’.

The conversations were audio and video taped with the control of these devices placed in the hands of the students. By allowing students to operate
the audio recorder and video camera, the process, timing and what was recorded was largely controlled by the students themselves.

These sessions began with an introduction from me, to the group. I explained that I was undertaking a task similar to the school projects that their teachers set for them. It was explained that their views would contribute to that project, but their identities would remain confidential. Rather than talking to me I asked them to ‘tell the world’ about their experiences. I hoped that in this way they would feel less that the conversation was with me and therefore affected by any differences in power they may have perceived, but instead, for the conversation to be with ‘the world’. To do this the students were asked to consider themselves as journalists, complete with the audio and video recording equipment such a job would require. The task was to prepare a short piece, which would tell the world about the sorts of ways they communicate with their teachers: for example in ‘face to face’ ways, and through the use of technologies such as the telephone, HF radio, computer, and/or the Internet. To help the students structure their presentation they were provided with the following written cue statements to which they were invited to prepare answers. They were told that they could use these cues or choose others if they would like. The cues were provided in writing to each student. These were as follows.

To tell the world -

- Introduce yourself and say where you live.
- Explain how you ‘go to school’
- If you use a computer – explain what you use it for
- If you use the Internet – explain what you use that for
- Describe what you like or not like about Camp
- Anything else you would like to say?

The students were asked to prepare their stories in pairs without adult help. The video camera was set up on a tripod, and the students took it in turns to operate the camera, operate the audio recorder and report their journalistic piece. Each student readily took part in this task without requiring any
encouragement and without complaint. The students encouraged each other as they participated in the task and all the students appeared to enjoy the activity. The length of each of these sessions was forty minutes.

Once the task was described and the students had prepared their responses, the students organised themselves to take turns using the video camera and ‘reporting their views to the world’. Due to ethical requirements, only the audio from these recordings have been transcribed and used for the purposes of this research.

**Participating In Monthly Teleconferences**

In conjunction with the research conversations undertaken with the ‘vertical slice’ of the schooling sector, I participated in regular, monthly, national teleconferences with the state and territory managers of distance education materials units and principals of distance education schools. The premise underpinning this approach was that an understanding of the policy context within which the research was being undertaken was considered an important consideration, since interpreting meaning of actions and texts requires reference to contexts (Lindlof 1995). The purposes for participating in the monthly teleconferences then were also twofold. Firstly, they provided the study with an ongoing contextual basis upon which to ground the study during the research period. Secondly, they provided opportunities to foster or generate circumstances within which I could remain current with the evolving policy developments and the emerging official language and discourse being used during that time.

These teleconferences form a part of the regular work of the officers concerned, and so to participate in them provided insights into the ongoing work of the managers and the principals. This provided a direct view of the social and cultural situations of schooling with which these officers dealt, and were generated from the point of view of those officers. It also provided insights into their reactions to certain initiatives as they were announced. All
those involved in the teleconferences were fully aware of my status as a researcher.

Each of these teleconferences was audio taped and notes were made from these tapes. Recording the teleconferences is a usual practice for these meetings. From a policy perspective this has allowed me to listen to the issues of concern discussed over this period, and for me to provide insights and to check my understandings with this group of senior officers. Our joint purpose was to discuss issues and understandings about the ongoing policy developments concerning the use of digital technologies in schools. In a mutually rewarding way it was anticipated that the research could have some practical applications.

By participating in the teleconferences, where it is possible to only respond to one another’s voices, (rather than using sight as well during the course of meeting), provided me with experiences similar to those of some distance education students who undertake their schooling by participating in teleconferences with their teachers and other classmates. In such events, listening is very important. One has to ‘read’ the voice rather than to ‘read’ the body language.

**Using Research Conversations As Texts**

It has been argued that as researchers we are not objectively separate from the world but are a part of it, and that research conversations are constituted by language where speakers and listeners participate together. Ricoeur (1988a) posits that once something is stated in conversation it no longer belongs to either the speaker or the listener, but acquires a life of its own. In other words, metaphorically, conversations become texts or objects and according to Ricoeur (1984), this performs an act of distanciation; placing a distance between ourselves as researchers and our conversations. As such the intentions of the conversants are not necessarily maintained. Instead the meaning becomes one held within the ‘text’ and may be subject to multiple interpretations. In research conversations then, the participants are the co-
creators of the texts and these are constructed through discussion and negotiation (Herda 1999). The text at this stage therefore is emergent rather than pre-existing (Kvale 1996).

The next stage of text creation involves creating texts of the conversations. This I did by personally transcribing the tape-recorded conversations into written documents. This was to take the advice of Herda (1999) that it is best if the researcher undertakes the task of fixing the discourses by transcribing the taped conversations. She suggests this because ‘in hearing the conversation one lives through the conversation experience again from a different perspective’ (Herda 1999: 98). Reissman (1993) also makes this point claiming that ‘taping and transcribing are absolutely necessary’ (Reissman 1993: 56) in narrative studies. Once transcribed, each line of the text was coded by allocating a number in sequential order beginning with ‘one’.

The texts were then read. Ricoeur (1988b) states that ‘the text must be unfolded, no longer towards its author but towards its imminent sense and towards the world which it opens up and discloses’ (Ricoeur 1988b: 53). The transcripts were read and ‘unfolded’ in order to develop an overview of the stories and the issues emerging from the texts. Common issues, or plots (Ricoeur 1988b) emerging from the stories were noted. Statements made by participants on similar issues were grouped together under a category label and the issues comprising this category were recorded on an issue by issue basis, along with a notation indicating each participant who mentioned the issue listed under the category heading. To substantiate the issues identified, relevant extracts were noted and placed underneath each of the categories identified. The stories then became the basis for a deeper review of what were the implications from the messages being conveyed to me.

I then reflected upon the issues that emerged from the research conversations. The outcomes from the conversations held with the participants, were placed alongside the interpretations undertaken of the policy and budget statements. While many narratives emerged from this
process, two narratives (described in Chapter Five as ‘economic’ and ‘education’ narratives), have been selected to form the basis of Part II of this thesis. Others interpreting the same data may have decided to interpret the material differently, but here for this study, the two narratives chosen for consideration in depth, were selected as they had the most data collected under these categories of ‘economic and education narratives’. As such within the constraints of this study, these two narratives have been regarded as worthy of report, discussion and debate in this thesis. Furthermore, these two narratives were considered as underpinning and intersecting with other social and organisational narratives that were identified in the data sorting processes used.

Policies And Budgets

Listening to the voices of those with whom the conversations were held, was undertaken in conjunction with a review of a range of official documents that were systematically collected. The Appendices and the Bibliography illustrate the coverage of the policies and budget texts reviewed. Specifically collecting and reviewing Treasury budget papers and policy documents is congruent with Connors (2000) observations that ‘policy approaches [and] funding mechanisms are not innocent. Certain devices serve certain desires more easily than others’ (Connors 2000: 14). Furthermore, Polkinghorne (1988) links textual organisational artefacts with viewing organisations metaphorically as texts, suggesting that an ‘examination of references to an organization in memos, letters and manuals can uncover, together with interviews, the various understandings of the organization’s story as it is carried in a narrative scheme’ (Polkinghorne 1988: 162). Here the organisations considered are the respective schooling systems in Australia, and interpreting their texts was part of the task of this study.

The focus for gathering budget information has been on the state, territory and commonwealth annual appropriation statements presented to Parliament, and the official digital technologies policies of the respective Australian public schooling systems. Other documents collected included
strategic statements and their associated support materials, government statistical reports, commissioned reports, Parliamentary Hansard, minutes of meetings, official government media releases, transcriptions of television and radio interviews of officers with the authority of the Crown, internal school and government level memoranda (forthwith referred to as memos), letters and other official government texts prepared on behalf of the government or government department or in a school, using the appropriate letterhead and signed with the authority of the government or government department or school, from which they emanated. Many of these have been available on the Internet. The gathering of the budget statements, policies and other documents has been used as a research method to be able to track changes undertaken, over the years of the research period.

**Budget Papers**

Treasury budget papers were collected from each state and territory, and from the commonwealth, for the 1998-1999 to 2001-2002 budget cycles. The purpose for doing this was to move away from statements that assert in general terms, that a lot of money is being spent on introducing digital technologies into schooling. The intention was to be able to move towards being able to more closely identify specifically, how much government money is claimed to be allocated and spent on particular initiatives arising from the advocated use of digital technologies at the school level.

The identification of these initiatives could be described as using a ‘self selection’ process. That is, for the purposes of this thesis, only initiatives that had funding allocated in the respective state, territory or commonwealth Treasury budget papers for school level, state-wide or national digital technology projects that the commonwealth or the respective state or territory itself had identified and funded, and had associated departmental policy documentation, have been included for consideration in this thesis. This has excluded any Year 2000 compliance strategies. This study has only investigated those programs that were specifically identified and funded, major initiatives within the school education sector. A summary of the funds
allocated in this way can be found in Appendices Three, Four and Five. Such an approach has provided an indication of the state and territory funded initiatives but is not definitive, as the amount of funding committed to the use of digital technologies in schools probably exceeds that identified through the processes used here. Individual schools make decisions at the local level about the purchase of technologies, beyond that which is state-funded. This occurs through the allocation of funds raised (for example) through school fetes and the like.

It has been important to recognise that Treasury documents and the gathering of official statistics generally, are socially produced, with certain social interests at their heart (Apple 1995). Part of the reason for using these data has been to employ them as a key to unlock some of these hidden interests behind the budget allocations, and as a lever for ascertaining the extent to which those interests are being exercised.

As the researcher, I am aware of the ways some governments re-announce the same allocated money several times (cf Connors 2000). Wildavsky (1988) noted this tendency in budget documents stating that the re-announcement of funds ‘has now become standard practice in relatively rich nations’ (Wildavsky 1988: 399). I have been alert to this possibility, and throughout the study I checked the details outlined in the Treasury documents used. On the other hand (and while it may sound naïve), theoretically it should be reasonable to assume that these are truthful documents, since they are tabled in Parliament as public accountability statements (Bridgman and Davis 2000).

**Policy Statements**
The use of policy documents has been undertaken with the view that the construction of ‘official knowledge’ (Apple 1993) involves discourses that cover a variety of texts and sites of construction. These documents can be considered as linguistic codes (Bernstein, B. 1971), prepared for translation into practice at local sites. The breadth of the documents collected and
reviewed was undertaken to build a picture of the nature and extent of the ‘official knowledge’ (Apple 1993) being circulated and promulgated.

Over time, the conceptual and language changes evident in the policy documents, raises the question: ‘what does this tell us?’ Allan Luke (1997a) states that tracking ‘transformations in policy texts provides us with an opportunity to laterally follow discourse and power as it moves across broader policies and legislation into the local sociologies of schools and classrooms’ (Luke, A. 1997a: 16). This study then, through the use of narrative theory together with the concept of hegemony, has aimed to identify and interpret the stories being told in and about school education policies, concerning the use of digital technologies in Australian public schools, and to interpret and understand the implications of these for those for whom the policies are intended.

Together the policies and budget statements were used as a base line of information that were considered to represent the views of their authors (in this case government agencies). Acting on Coffey and Atkinson’s (1996) advice that it is important to explore the issues under investigation and the data gathered, from a variety of perspectives, different sources and sorts of data have been gathered. This has supported the development of the interpretations presented in this thesis developed through the use of narrative theory and the concept of hegemony. The ability to view changes over time through the use of the documents and to put these alongside the views and experiences gathered through the research conversations has provided different perspectives to the study.

**Using The Policies And Budget Statements**

In a similar fashion to the way the transcripts of the research conversations were processed, so too the policies and budget statements were read in two ways. Firstly, the budget paper and the policy documents were tracked over time to identify the priorities identified by governments. The documents were searched for the common use of words, phrases, plots and stories that
could be used as indicators of the functions the documents were intended to perform. Changes in the language used in the policy documents or budget statements were noted. Secondly, the policies and budget statements were read to identify their place within the emerging narratives from the research conversations. The issues identified through the reading of these texts were placed alongside of the transcripts of research conversations. Commonalities and differences in the discourses were identified. Interpretations of the language usage and identification of these stories was then undertaken.

It can be seen then that a variety of data from a range of sources has been gathered. This was undertaken for two reasons. Firstly, I had observed that little public discussion and debate seemed to be occurring concerning the advocated ubiquitous use of digital technologies, and so this strategy was seen as a way of gathering together the official discourses that were publicly available. Secondly, the nature of this research is complex, and to address this complexity, the gathering of different sorts of data was undertaken to unfold some of these complexities. In addition, this complexity was seen to be partly due to the level of contestation that is inherent in Australian school education (cf Connell et al 1982; Connell 1985; Luke, A. 1995; Marginson 1998; Mercurio 2001; Reid 1998). There are a number of organised groups with interests in school education, and the debates that occur between them over time are part of the history of school education in Australia (Mercurio 2001; Spaull 1998). It will be asserted in Part II that these levels of contestation have been honed however, and with the advocacy of using digital technologies in schooling, there has been a bringing together even more tightly, of private markets and public schooling (Kenway et al 1994; Kenway 1998; Marginson 1997). But this is to get ahead of myself.

This study has used a variety of texts and these have been considered from different perspectives, using narrative theory together with the concept of hegemony. Part II which follows, provides the outcomes from the readings of the texts generated through the research conversations and the collections and review of the policy documents and the Treasury budget statements.
PART TWO

The following three chapters form Part Two of this thesis. These chapters have been structured around the temporal concept important to narrative theory: that of the past, the present and the future (Carr 1986). Time comprises events and actions, and the past, the present and the future provide coherence to these. Such an approach allows for considering experiences narratively and for the interweaving of perspectives. In this thesis, the present is considered as the time of the initiatives researched; ‘the time when the weight of history that has already been deposited, suspended, and interrupted, and when the dream of history yet to be made is transposed’ (Ricoeur 1988a: 208). For Ricoeur, interpreting the present is a product of historical understanding (Taylor, G. 1986), where ‘understanding’ allows us not just to know that certain actions happened but also to know what justified those actions happening (Carr 1986). Carr (1986) also argues that the future is informed when the present and the past constitute its background.

As such Chapter Four provides historical and traditional contexts of public schooling in Australia within which this research has been based. This is undertaken by providing a brief history and an outline of selective traditions that underpin public schooling in Australia. Chapter Five presents the economic and education policy narratives that have emerged from this study. Chapters Four and Five raise the question ‘what do we mean by universal education in the 21st century?’ In doing so, these chapters highlight the tensions between the perspectives of the past and that of the present and proposed futures. Chapter Six proposes possible futures by using the process of scenario planning to reauthor one of the dominant narratives that has emerged through this research.
The central question identified for this thesis then is ‘what does public schooling mean in Australia in the 21st century, with its past tradition of free, compulsory and secular schooling, and given the present public schooling sector policies are urging the ubiquitous use of digital technologies?’ In seeking to answer this question, Part Two of this thesis has taken an activity centred approach to interpret, understand and explain the present, with an understanding of the past, and a view to asking what actions (if any) should be taken in the future to ensure the goal of continuing to provide universal public schooling in the 21st century.
Public school education systems in Australia have histories and traditions that have developed over time, and influence policy developments today. The purpose of this chapter is to outline the history and three traditions that have been determined as pertinent for this thesis, in order to debate the central question identified for this thesis: ‘what does public schooling mean in Australia in the 21st century, with its past tradition of free, compulsory and secular schooling, and given the present public schooling sector policies urging the ubiquitous use of digital technologies?’ It is the tradition of public schooling being ‘free, compulsory and secular’ then, that is the first tradition discussed in this chapter.

Secondly, in order to ensure the provision of free, compulsory and secular schooling to all Australian children, the history and tradition of the provision of distance education is outlined in this chapter. It was raised briefly in the previous chapter that given the technology-mediated nature of distance education throughout its history, there might be lessons available from distance education to offer those working in ‘face to face’ schooling wrestling with the introduction of digital technologies into their classrooms. This chapter therefore interprets the historical and traditional contexts for the provision of universal schooling in Australia, both for ‘face to face’ and distance education. This approach is not one of customary practice. It is more usual to see a history of schooling that either merges distance education into a more general history or only makes cursory references to it (cf Burke and Spaull 2001; Butts 1964; History of Education Review; Ling 1984; Turney 1983). Alternatively, specialist distance education research reports only distance education studies (cf Open and Distance Learning Association of Australia (ODLAA) Distance Education journals).
The third tradition, and its history, discussed in this chapter is the tradition of uniqueness of each of the Australian states and territories.

It is anticipated that providing an interpretation of the past will prepare us for the next chapter where the task will be to interpret and understand the policy narratives of the present. This will provide a basis upon which to determine what public schooling may mean in the future. Before debating these specific traditions however, consideration will first be given to the general nature of traditions and selective traditions.

**TRADITIONS AND SELECTIVE TRADITIONS**

The matrix within which ideas are developed, reviewed and promulgated, are traditions of thought (Gare 2000). These are important to recognise as they provide a context within which we can develop our interpretations and understandings about what is happening around us and where we are located within such circumstances. Furthermore, it was argued in Part I of this thesis that an understanding of the situatedness of a research study is a necessary precondition to undertaking a project such as this (cf Gadamer 1975). Gadamer (1975) suggests that this is necessary as it colours what it is we believe is worth knowing. Surfacing the preconditions of the situatedness of the research at the outset he argues, supports undertaking a reflexive research project as it means that an awareness of how these preconditions change over time is possible. Gramsci (1971) on the other hand, used history as a starting point for developing his major theoretical concepts (cf Bullock and Woodings 1983). He viewed history as a process of conflicts and compromises where one group of people emerged as dominant over another. Gramsci (1971) however, understood the role of tradition in the processes of hegemony seeing it as a process of disarticulation and rearticulation of the elements comprising hegemonic practices (Mouffe 1993).

In the research for this thesis, recognition of the nature of certain histories and traditions have been considered as important to acknowledge, not allow
to be taken for granted, and to be subjected to investigation and debate. In doing so, the pre-conditions for these histories and traditions have been recognised. In addition, acknowledging the role of certain traditions in public schooling will achieve one of the purposes of this thesis: to ask questions about some of the taken for granted assumptions embedded within the stories of school education at a time when digital technologies are being advocated for widespread use in schools, and as a core policy requirement in the provision of universal schooling in Australia.

**Characteristics Of Traditions**

Traditions comprise assumptions, beliefs and practices that provide a background to current social and cultural practices (Gadamer 1975). MacIntyre (1988) talks about ‘traditions of knowledge’ which are self-maintaining and which locate the rules by which our understandings of contexts are created. Traditions are shared by those recognising themselves to belong to a particular social group (Scruton 1982) such as those within a public schooling system, and in this sense, traditions provide the background of assumptions and beliefs belonging to the group. In this way, traditions are processes that are handed down from one to another and through this, they define the context within which actions occur. Traditions develop in depth, as understandings about certain reasons for actions also develop. Thus, traditions can provide an attachment to a time, place and to social and institutional arrangements that bring the past into the present (Scruton 1982).

Herda (1999) suggests that using interpretative approaches ‘relies in a substantial way on the authority of traditions’ (Herda 1999: 9). She posits that reinterpretations of one’s self and one’s culture through research, requires an exploration of the relationships we have with others. This requires an understanding of the traditions of that culture. Both Pocock (1968) and Coleman (1968) have argued too that authority is a characteristic of traditions. Pocock (1968) states that ‘depending upon what modes of authority are supposed to be inherent in the tradition under discussion, …
there will be concepts of action and transmission peculiar to the tradition’s institutional character, and taken for granted without critical investigation’ (Pocock 1968: 226). Traditions then, are important to recognise in interpretative studies such as this, since the circularity of interpretation occurs against the backdrop of the beliefs, practices and assumptions of those involved in the research study (Usher, R. 1996).

**Live Traditions**

Ricoeur (1984) sees traditions as dynamic and developing over time. He states ‘let us understand this term [tradition] not the inert transmission of some already dead deposit of material but the living transmission of an innovation always capable of being reactivated’ (Ricoeur 1984: 68). He states that traditions live ‘by grace of interpretation, and it is at this price that it continues, that is, remains living’ (Ricoeur 1974: 27). Raymond Williams (1989) notes however, that there is one sense of the term ‘tradition’ that contrasts with notions of traditions being alive. This sense of the term ‘tradition’ to which Williams refers is employed to counter claims of ‘innovation’. Williams states that for some, a defence against proposals for ‘innovation’ or ‘progress’ is to make demands for a return to ‘traditional values’. Pusey (1992) captures this point stating that ‘traditions rely on a certain temporal organisation and that appeal is often made to them … to secure the “values” of the past in the present against revolutions in the future’ (Pusey 1992: 181). Williams however, sees this version of tradition as one of the weaker senses of the concept (Williams, Raymond 1989). It is one however, that is pertinent to this study since appeals to return to ‘traditional values’ tend to be made by those insecure or unsure about changes (real or proposed) that are occurring. That is, such appeals operate as a form of resistance to change or innovation.

Like Ricoeur, MacIntyre (1985) argues that traditions are dynamic and can grow and develop over time. Dynamic traditions require the activity of people having shared understandings about certain actions or practices that they hand down from one to another (Scruton 1982; Williams 1976).
MacIntyre (1985) posits that ‘when a tradition is in good order it is always constituted by an argument about the goods the pursuit of which gives to that tradition its particular point and purpose’ (MacIntyre 1985: 206). He goes on to say that a living tradition ‘is an historically extended, socially embodied argument, and an argument precisely in part about the goods which constitute that tradition. Within a tradition the pursuit of goods extends through generations’ (MacIntyre 1985: 207). MacIntyre (1988) also contends that to take part in the ‘argument’ of constituting traditions occurs through the use of narratives. Hence this thesis is bringing to the forefront for debate, the tradition of public schooling being ‘free, compulsory and secular’.

Along with Ricoeur (1984) and MacIntyre (1985), Pocock (1968) too has written about the dynamic nature of traditions. He states that ‘the concepts which we form from, and feedback into, … have the capacity to modify the content and character of the tradition conceptualised and even the extent to which it is conceived and regarded as a tradition’ (Pocock 1968: 210). He asserts that tradition is an essential feature of society, defining tradition as ‘the handing on of formed ways of acting, a formed way of living, to those beginning or developing their social membership’ (Pocock 1968: 209). He indicates that traditions are important for providing a sense of institutional continuity over time, and therefore can be considered as something handed from one to another, sometimes over generations. In this way he asserts that traditions include the transmission of ideas, statements, beliefs, rules and customs.

Damon Young (2001) also argues that traditions should not be considered as stagnant. He asserts that ‘without an understanding of tradition, even if we are attacking this tradition, we cannot debate rationally, reach conclusions, and undertake political action’ (Young, D. 2001: 3). He admits that there are ‘conservative’ elements in the concept of ‘tradition’, and that these should not be overlooked, but argues that without knowing what the traditions are (conservative or not), it is not possible to deliberately reauthor them. This
then provides others with the opportunity to reauthor those traditions for us: ‘it is only in the light of past traditions, or narratives, that new democratic reforms can be created, judged and implemented. … To get to the “root” of things, we must engage with tradition’ (Young, D. 2001: 5), but he warns us not to become ‘slaves to tradition’ (Young, D. 2001: 21).

A seductive argument however, is that the use of digital technologies in schooling does not have a tradition and is without a root that can be pursued. Such claims though, ignore the history and traditions of public schooling that have been identified for discussion later in this chapter. Pausing for a moment then, a brief excursion is taken here to discuss the view that traditions are unnecessary or are being lost.

Lack of and losing traditions – neo-liberalism and globalisation
Frissen (1999), Pusey (1992) and Damon Young (2001) each argue that claims that traditions have been lost or are unnecessary, are linked to neo-liberalism (Bourdieu 1998), and more recently to the concept of globalisation. Frissen (1999) has observed the impact of neo-liberalism on governments’ work, stating that traditions are losing their significance: ‘they are becoming an archive’ (Frissen 1999: 172). Pusey (1992) argues however, that one part of a neo-liberal agenda (Bourdieu 1998) is to argue that acceptance and adherence to traditions is no longer necessary and that individual rationality played out in the market will replace traditions’ purposes and functions. He states ‘that one of the defining characteristics of so-called “modern” societies is that traditions everywhere are losing their power to structure expectations as reliable predicates for public policy’ (Pusey 1992: 181). Damon Young (2001) has made similar observations stating that some ‘people have lost a sense of tradition, leading to the corruption of language, and an inability to engage in sensible, meaningful dialogue’ (Young, D. 2001: 4). Constructing the use of digital technologies as a ‘new economy’ feeds the view that there is an absence of commonly understood language and traditions influencing the sector.
Roy Green and Andrew Wilson (2001) make links between neo-liberalism and ‘globalisation’, arguing that ‘globalisation’ is the latest form of neo-liberalism. They argue that the political agenda of both is identical on the ‘essentials’: ‘free trade, abolition of controls on movement of capital, deregulation and privatisation of industry, reduction of state expenditure especially on welfare, emphasis on curbing inflation rather than unemployment, restrictions on trade union rights and deregulation of the labour market’ (Green and Wilson 2001: 166). They argue that a new element in this mix of neo-liberalist strategies is the justification that the ‘development of global markets has allegedly undermined the autonomy of the nation state and the possibility of effective controls on capital’ (Green, R. and Wilson 2001: 166). That is, for proponents of non-interventionalist market mechanisms there remains a justification for their position as a result of globalisation, since such forces, according to their arguments, have made the State impotent. It is these characteristics described by Green and Wilson (2001) and to which Pusey (1992) was referring, that are those implicated in the demise of certain traditions. Connors (2000) however has written in a hopeful fashion, that in spite of the neo-liberal agendas around us, that some of ‘our proudest traditions remain’ (Connors 2000: 21). The tradition to which she was referring was that of public schooling being ‘free, compulsory and secular’. It is the tradition of public schooling being ‘free, compulsory and secular’, and a questioning of whether this tradition remains alive and well, that will be debated in Chapter Five.

**Selective Traditions**

While there are debates about whether traditions can be considered as static or dynamic, Raymond Williams (1989) has linked hegemony and traditions. He indicates that a tradition can be understood as a ‘relatively inert, historicized segment of a social structure: tradition as surviving from the past’ (Williams 1977: 115). He recognises however, that traditions are dynamic, stating that ‘this [inert] version of tradition is weak at the very point where the incorporating sense of tradition is strong: where it is seen, in fact, as an actively shaping force’ (Williams 1977: 115). Williams (1977)
links the concept of tradition and the concept of hegemony, stating that ‘tradition is in practice the most evident expression of the dominant and hegemonic pressures and limits. It is always more than an inert, historicised segment; indeed it is the most powerful practical means of incorporation’ (Williams 1977:115). This he refers to as a ‘selective tradition’: ‘an intentionally selective version of a shaping past and a pre-shaped present, which is then powerfully operative in the process of social and cultural definition and identification’ (Williams, Raymond 1989: 58).

Raymond Williams (1989) posits that most traditions are selective where certain dominant values and meanings are deliberately selected over others. Rejected traditions are left to wither. Traditions represent the ‘significant past’ and the decisions about what is significant to maintain and to reiterate as traditions, is a part of an hegemonic process, according to Williams. It is the significant version of the past that legitimises the present. ‘The hegemonic sense of tradition is always the most active: a deliberately selective and connecting process which offers a historical and cultural ratification of a contemporary order’ (Williams, Raymond 1989: 59). Further, Williams (1989) warns that any counter-hegemonic activities must be wary of selective traditions as such activities will have little effect unless the clear lines to the present employed by the selective tradition are clearly traced and addressed.

Mouffe (1993) has taken a slightly different tack to Raymond Williams. She sees traditions as series of already existing discourses, and it is through our immersion in those existing discourses or traditions, that we take part in the world: ‘tradition becomes the set of language games that make up a given community. … Tradition is the set of discourses and practices that form us as subjects’ (Mouffe 1993: 17). Mouffe (1993) draws upon Gadamer (1975) to argue that since there is a unity between thought, language and our world, then it is through language that ‘the horizon of our present is constituted’ (Mouffe 1993: 17). Further, this language carries with it marks of the past: ‘it is the life of the past in the present [that] constitutes the movement of
She argues, however, that since it is possible to make different interpretations of the same text that certain aspects of tradition can be played against each other. She demonstrates this point by highlighting how this has been achieved with the neo-liberal redefinitions of democracy and equality; a point that is taken up further in this thesis in Chapter Five. As such, she argues that ‘what we need is a hegemony of democratic values, and this requires a multiplication of democratic practices, institutionalising them into more diverse social relations, so that a multiplicity of subject positions can be formed through a democratic matrix’ (Mouffe 1993: 18). She is arguing therefore, that the traditional concepts of democracy should be treated as a ‘significant past’ and brought into the present using hegemonic pressures in order to counter the neo-liberal redefinitions.

To take Williams (1989) concept of selective traditions then, and to take Mouffe’s (1993) views of hegemony, (which are linked with Gadamer’s (1975) views of language and tradition), consideration of what are traditions and identifying those that are maintained and those that are rejected within the policies advocating the use of digital technologies, is important in this thesis. This is because a part of making implicit assumptions more obvious is to highlight the traditions being maintained and rejected, since they otherwise could remain unapparent in circumstances where arguments are put that there are no traditions pertinent when considering the use of digital technologies in schooling. Understanding the implicit assumptions that are made in policy texts including the nature of their authority, require review as they contextualise schooling in Australia. This will help to determine what should constitute traditions for the future.

Traditions can sometimes have the force of laws (Little, Onions and Friedrichsen 1973), and in the Australian schooling systems this is pertinent since some of the traditions have developed and been formalised into legislative requirements. This provides strength to the maintenance of that
tradition. In these ways our social and cultural contexts and the institutions within which we live are partly constructed by traditions.

To consider the contexts for this thesis then, it was argued in Chapter One that the geography and the number and location of sections of the population affect how universal schooling is provided in Australia. This, it was argued, is due to the disparate nature of the demographics of Australia’s population and its implications for decisions about where to send teachers, where to locate public school buildings, and more recently where to provide telecommunications facilities and services. The physicality of the location and provision of telecommunications facilities and services is emerging as a pertinent issue since each of the public schooling systems in Australia have advocated the use of digital technologies as core policy requirements. The intention to translate the policy rhetoric into practice means that the provision of appropriate and adequate telecommunications facilities and services also must logically become a core policy requirement. This will be discussed further in Chapter Five. Now, consideration of some of the histories and traditions of public schooling in Australia, follows.

PROVIDING UNIVERSAL EDUCATION

In this thesis it is argued that Australia’s constitutional and legislative arrangements, with its history and traditions, have contributed to shaping how universal school education has been, and is, conceptualized and provided. Reflecting upon the history of Australia’s provision of universal schooling may assist us when we consider the question raised in the first chapter: ‘what does public schooling mean in the 21st century?’

A Tradition of ‘Free, Compulsory and Secular’ Schooling

Between 1872 and 1895 the six colonies, which subsequently became the states of Australia, each proclaimed state education Acts of Parliament (Hyams and Bessant 1972). The first colony to do so was Victoria, seeing the Victorian Education Act of 1872 (Portus 1937; Spaull 1998; Turney 1975). Queensland followed with its Education Act of 1875 (Portus 1937;
South Australia proclaimed its Act in 1878 (Portus 1937), New South Wales established the Public Instruction Act in 1880 (Portus 1937; Spaull 1998), Tasmania proclaimed its Act in 1885 and Western Australia did so in 1893 and 1895 (Partridge 1973; Portus 1937; Turney 1975).

These respective state Education Acts established the basis for the provision of free, compulsory and secular primary and subsequently, secondary education. As Spaull (1998) explains ‘the constitutional basis of education was founded on a legal guarantee that the states should provide a minimum standard of education for the mass of children’ (Spaull, 1998: 5). There was an assumption that ‘a little education is good for all children but much education is good for only a few’ (Butts 1964: 31). That is, it operated much like a safety net; it was a way of providing schooling to those who could not afford private schooling. Therefore, although not as radical in practice as the intentions of the respective Acts specified (Ling 1984), the Acts nonetheless did represent State intervention for the provision of schooling to ensure a basic educational provision to the children of the colonies. The following extract from a Parliamentary Paper tabled in 1884, illustrates this.

Unless a child can read fluently, spell correctly, add up and multiply columns of figures with quickness and accuracy, he is mentally crippled, not merely in the ordinary business of life, but in the pursuit of higher scholarship (Parliamentary Paper 1884 in Ling 1984: 48).

Blackmore (1999) has argued similarly to Ling (1984), that the respective Education Acts were constructed specifically with clear divides between public or free and secular education, and that offered by the private sector, through the churches. The purpose was to provide all children whether in rural, regional or urban areas with a primary education. As such, there was a public commitment to the provision of universal education managed through ‘strong, centralised state-run educational bureaucracies’ (Blackmore 1999: 69).
Similarity Of The Education Acts

Each of the state Education Acts were similar to each other (Hyams and Bessant 1972), and while the issue of commonality between the states’ Education Acts is discussed at this point, their claimed uniqueness from each other will be discussed later in this chapter.

Partridge (1973) has observed that the states’ Education Acts were alike noting that the ‘variations amongst the colonies were relatively slight; it is in fact remarkable that six quite independent, self-governing colonies should have finally arrived at such nearly identical arrangements’ (Partridge 1973: 31). Each of the Education Acts essentially outlines the state responsibilities in relation to the provision of schooling. As illustrated by the following extracts from the Victorian Education Act of 1872, schooling was placed under a Minister of the Crown (cf Cleverley and Lawry 1972).

For the better carrying out of the provisions of this Act an Education Department shall be formed, to consist of a Minister of Public Instruction, who shall be a responsible Minister of the Crown, a Secretary, an Inspector-General, inspectors, teachers and such officers as may be deemed necessary (Victorian Education Act of 1872: 5, in Turney, C 1975: 61).

Various authors (Butts 1964; Hyams and Bessant 1972; Partridge 1973; Portus 1937; Turney 1975) have argued that as a consequence of the proclaiming of these state Acts, and placing the total responsibility of schooling under government departments of education, saw features established that last to this day: centralisation and uniformity. As one chief executive officer participating in this research stated, ‘the education system developed in the early to mid 1800s, and it was developed along a factory model line. And it was developed on conformity and consistency’ (KL July 26 2000: lines 117-122).

The Victorian Education Act was the first to make education free, compulsory and secular, as demonstrated in the following extracts selected from various sections of the Act.
In every State school secular instruction only shall be given and no teacher shall give any other than secular instruction in any State school building (Victorian Education Act of 1872: Section 12, in Turney, C 1975: 62). …

The parents of children of not less than six years and no more than fifteen years shall cause such children (unless there is some reasonable excuse) to attend school for a period of sixty days in each half year. Any of the following shall be a reasonable excuse: -

   (i) That a child is under efficient instruction in some other manner;

   (ii) That the child has been prevented from attending school by sickness, fear of infection, temporary or permanent infirmity, or any unavoidable cause;

   (iii) That there is no State school which the child can attend within the distance of two miles, measured according to the nearest road from the residence of such child;

   (iv) That the child has been educated up to the standard.

   …

The parent of any child who neglects to send such a child to school as provided in the last section may be summoned by any person authorized by the Minister or the local Boards of Advice before a justice, and on conviction of such offence shall forfeit and pay a sum not exceeding five shillings for the first offence and twenty shillings for every succeeding offence, or in default may be imprisoned for a term not exceeding seven days (Victorian Education Act of 1872: Sections 13-14, in Turney, C 1975: 62-63). …

For the free instruction of all children attending school in the subjects specified … teachers of State schools shall be paid such salary and remuneration by way of results as shall be fixed by
It should be noted that apart from New South Wales where the New South Wales Public Instruction Act of 1880 included secondary schools, that the intention of providing free, compulsory and secular education, was limited at the outset, to basic, elementary or primary education (Spaull 1998). Secondary education for all did not emerge as an issue until between the First and Second World Wars and continued to be so after the Second World War (Spaull 1998; Turney 1975). As Spaull (1998) indicates,

“free” state secondary education was introduced around 1920 but because of state financial emergencies, especially during the Depression, tuition fees were reimposed for most state students and remained in force in at least two states until World War II (Spaull 1998: 6).

There was an expansion of the provision of free secondary schooling after the Second World War however, as Australia became a more industrialised and affluent society (Spaull 1998). The provision of ‘free, compulsory and secular’ or universal schooling therefore, was constructed upon implicit beliefs and values seeing ‘free, compulsory and secular’ schooling enshrined in Acts of Parliament: ‘the state must pay for the education of those children whose parents cannot afford to pay for it. That is not almsgiving but the principle of cooperation carried out to its fullest extent’ (Stephen 1872 in Spaull 1998: 4-5).

While the details of the respective state Education Acts have changed over time, the Acts still essentially cover the same sorts of responsibilities. The roles and responsibilities of teachers are outlined. Student attendance requirements have been a distinguishing feature. The ability to physically attend a school has been a requirement defining compulsory education and a differentiating characteristic between ‘face to face’ schooling conducted in government owned school buildings, and that delivered through ‘distance education’, provided by the state and conducted in the home. In this way,
directly and by de facto this and other subsequent revisions of the Education Acts describe what is a school, and what is schooling. There has been then, considerable commitment over time, to the provision of free, compulsory and secular, or universal schooling in Australia between the ages of six and fifteen.

Role Of The Commonwealth
The state Education Acts, established prior to Federation, remained in place when Australia became a Federation in 1901 (Birch 1975; Partridge 1973). According to Birch (1975), this ‘omission was intentional and caused no concern to those who brought the Federation into being’ (Birch 1975: 1). Nor was the issue of school education staying a state responsibility seen as a contentious matter (Birch 1975).

One hundred years since Federation, the constitutional responsibility for public schooling remains with the state governments. This has been reiterated over the past century. For example, in 1958 the federal Member of Parliament Gordon Bryant stated ‘I realize that the Constitution mentions education not at all’ (in Birch 1975: ix). Prime Minister Menzies also in 1958 stated ‘the fact is that education, except in Commonwealth territories, remains a function of the States’ (in Birch 1975: x). In 1971 the Minister for Education and Science stated

so far as the taxpayer is concerned, Australia is a Federation under which certain powers have been given to the Federal Government and the remainder have been left with the State governments. The responsibility for education was a power exercised by the States ever since they took over responsible government in Australia and a power which they retained after Federation. ... The States have the constitutional power for education, and in the foreseeable future they are likely to continue to have it (in Birch 1975: ix).

This position continues to be indicated by the MCEETYA; government schools operate under the direct responsibility of the state or territory school Education Minister of the Crown (MCEETYA 1999b).
While Section 51 of the Constitution (which outlines the powers of the commonwealth government) does not mention schooling (Lingard and Porter 1997), as with any Parliamentary Acts, this can be changed, contested or the associated traditions redefined within the existing laws. As Summers, Woodward and Parkin (1991) remind us, the Federation of Australian states is not static; ‘it is the product of a complex interrelationship between the legal, economic and political capacities of the states and the commonwealth’ (Summers, Woodward and Parkin 1991: 73). Partridge (1973) has observed similarly, that policies and financial arrangements are contested and negotiated between the commonwealth and the states. He explains that since legislation was passed in 1942-43 to address financing problems associated with the Second World War, the states in essence have been unable to directly collect income taxes. This has been the providence of the commonwealth government, and has raised the strength of the commonwealth in relation to school education policy matters (Partridge 1973; Spaull 1998; Summers 1991). Connors (2000) indicates that the role of the commonwealth in the provision of schooling also was legislatively increased in the 1946 referendum where it gained the power to provide ‘benefits to students’. She asserts that this power added authority to the commonwealth’s right to provide financial assistance to the states under the ‘States Grants Legislation’ (Connors 2000). With the introduction of the Goods and Service Tax (GST) in 2000 the role of the commonwealth in providing funds to the states has been further increased. It has been argued by the Prime Minister that the extent of this tax collection and associated provision of financial grants to the states for education will increase (Howard 2001b).

Since the 1942-43 legislation then, the commonwealth has collected income taxes and then provided financial grants back to the states (Summers 1991). Partridge (1973) argues that this process has extended the power of the commonwealth over the states, since the states in effect, are financially dependent on the commonwealth government. That is, while states and
territories are responsible for the provision of schooling, which is an expensive budget item, they have been ‘vulnerable to the exigencies of Commonwealth funding’ (Lingard and Porter 1997: 2). The extent and nature of the financial grants made by the commonwealth to the states historically has been matter of political negotiation and usually a matter between the Prime Minister and the state Premiers (Summers 1991), where invariably the process and outcomes are contested at Premiers’ Conference meetings (Summers 1991). This means that while the states and territories have financial responsibility for the provision of school education, they are dependent on the receipt of funds provided through the commonwealth government. Therefore in relation to taxation and its implications for education policy development and implementation, the commonwealth has dealt itself a significant role to play.

**International Responsibilities For The Provision Of Universal Schooling**

Australia’s legislation and policy responsibilities for the provision of universal public schooling also operate at the international, as well as the state or territory levels. At an international level, Australia is a signatory to the United Nations Convention on the Rights of the Child (HREOC 2000a). Article 28.1 of this Convention states that

States Parties recognize the right of the child to education, and with a view to achieving this right progressively and on the basis of equal opportunity, they shall in particular:

(a) make primary education compulsory and available free to all;
(b) encourage the development of different forms of secondary education including general and vocational, make them available and accessible to every child, and to take appropriate measures such as the introduction of free education and offering financial assistance in case of need; ... [and]
(c) take measures to encourage regular attendance at school and the reduction of dropout rates (United Nations 1989: 9).
Australia’s responsibilities for the provision of schooling to its citizens therefore, is moral and political in nature, but beyond this there is also a legal obligation to ensure and advance the rights of the child through as many avenues as possible available to the Australian government. The HREOC suggests that this includes through its legislative, administrative and judicial mechanisms (HREOC 2000a). Eva Cox (1998) similarly argues that there is a moral requirement for the provision of universal schooling, as she sees it as a prerequisite for a civil society (Cox 1998).

The provision of universal schooling then is legally intended to be free, compulsory and secular to all those aged between five and fifteen or sixteen, depending on the state or territory. Further, Australia is bound by being a signatory to the Human Rights Convention of the Child which specifies that free schooling to all primary aged and preferably to all secondary aged students, is provided. How this is achieved with those located in rural, regional and remote communities has its own history and traditions which will now be explored.

A Tradition Of Distance Education

Two initiatives began the history of school level distance education in Australia. In Queensland from 1901 and in New South Wales between 1908 and 1916 ‘travelling’ schools and teachers provided schooling to students in rural and remote areas. These schools included using ‘face to face’ and correspondence teaching methodologies.

The travelling teacher is expected to visit each family in his district at least four times a year; he stays as long as possible at each visit; teaches the children, revises the work, written or otherwise, which has been done since his last visit; outlines the work which is to be done before he returns, cheers, reproves and passes on (Story, J.D. 1915: 17 in Turney, C 1975: 265).

Distance education through the use of correspondence lessons as the sole mode of delivery however, was first initiated in Australia, with a request from a parent in Beech Forest in the Otway Ranges in Victoria in 1914
The provision of correspondence education grew from this beginning and in 1916, was formalised into state departmental systemic initiatives in Victoria, and concurrently in New South Wales. The provision of distance education through correspondence, to primary aged students (and later, to secondary school students) has occurred in Australia since this instigation. Western Australia, South Australia and other states followed Victoria and New South Wales, with Queensland being the last state to introduce distance education as a systemic initiative, in 1922. It was originally intended for and provided to students who were geographically isolated (Education Department of South Australia 1971; Hyams and Bessant 1972; Moyle 1999).

It should be noted however, that with the arrangements for correspondence education there were some concerns that it was too expensive.

These provisions for education of the rural child were costly and elaborate. The fact that the country power interests held the balance of power in the various legislatures helped in this regard, as each party sought to win the favours of country voters (Hyams and Bessant 1972: 119).

‘Country power interests’ are maintained in 2001, particularly through the political lobbying of the Isolated Children’s Parents Association (ICPA), whose constitution includes ‘to lobby appropriate authorities to expand existing specialist services or establish new ones that will improve the educational, social and cultural life of isolated students’ (ICPA 1995: 1). In 1999-2000 the New South Wales branch of the ICPA alone, held twenty seven deputations in Parliament House (Luelf 2000: 1).

While the costs for the provision of distance education were viewed as expensive, Hyams and Bessant (1972) have noted that there was a widespread assumption that the special aid provided for the rural child was part of the function of the centralized education systems. It was seen as an advantage of such systems that they could offer the
great majority of children in each state access to similar opportunities (Hyams and Bessant 1972: 119).

The costs for distance education remain contentious to this day, as is reflected by the numerous reviews of distance education held in each state and territory in the recent past (cf Government of Western Australia 2000a; Grounds and O’Brien 1997; Tyrer 1999).

**How Distance Education Has Been Provided**

Distance education in the schooling sector in Australia has tended to be defined by its characteristics. While ‘face to face’ teaching and learning refers to the provision of schooling where the teachers and the students are in the same location at the same time, usually within a school building or classroom, as specified by the relevant Education Act, the concept of ‘distance education’ is used when referring to the provision of programs of study where the students and the teachers are separated by space and sometimes time. Students do not attend school classes where they physically can see and talk to their teachers or other students in a ‘face to face’ setting. They are not in the same space; their teachers are in a different geographical location to them: ‘in distance learning, tutor and student do not need to be in the same place at the same time in order for education and communication to take place’ (Miller, Kennedy and Leung 2000: 129).

Distance and the sparseness of some of Australia’s population, along with the legislative requirements for the provision of compulsory schooling, constructs the necessity for methodologies that overcome the teaching problems created by distance. To this extent, this makes ‘distance education’ a teaching methodology; a style of teaching. It is one where the teacher-student relationship is mediated through technology; whether that be a pen, HF radio, telephone or computer. The mode or methodology of teaching has been created to accommodate the gaps in time and space generated by distance. This was reflected in the South Australian definition of ‘distance education’ that was agreed upon by a Steering Committee in 1984. It stated that distance education is
a purposeful and deliberate learning activity, planned and structured by a teacher, received and controlled by a learner who is operating in a non-contiguous communication mode for most of the time. This educational process should be supported by available and evolving communication technologies (South Australian Education Department 1984: 15).

This definition highlights the technology-mediated nature of distance education, which is dependent upon the appropriate choice and effective use of technologies to do the jobs required. This highlights the skills of distance education teachers, who have always conducted their classes mediated through the use of different sorts of technologies.

Technology-mediated learning
Initially the predominant distance education methodology adopted was ‘correspondence schooling’. Teachers produced written materials that were forwarded to the student using the postal services. Teachers would teach through the writing of materials and students would learn by responding to those written materials (Education Department of South Australia 1938). Due to the distance and hazards involved and the slowness of the postal services, this could be a very long process. As a parent in December 1920 wrote to her son’s teacher:

I am sorry you have not received Roderick’s lesson books, but it is owing to heavy rains and floods. We cannot get the horses to cross, and are sometimes stranded for a whole week without meat, absolutely living on bread and jam, and we are lucky to get that. Roderick is getting on very well considering (Correspondence School of South Australia 1920: 1).

Correspondence schooling was also dependent upon a certain level of literacy in the English language in the home, so that the teacher’s instructions and resources could be read, understood and undertaken. Here the learning was mediated over a relatively long period of time through the use of pen and paper.
In the 1950’s, small rural schools were merged into larger ‘area schools’ and with this, Schools of the Air emerged. Schools of the Air provided schooling to those students who were located too far away to physically attend any schools. The history of Schools of the Air is linked into the history of the Royal Flying Doctor Service, which is directly linked to the demographics and geography of Australia; it is a large land and for large parts of it, it is sparsely populated. Several Schools of the Air began using the buildings, facilities and radio frequencies of the Royal Flying Doctor Service to conduct lessons. Some Schools of the Air in Western Australia continue to do so, and some use their own school frequencies. Over and above the use of correspondence, HF radio allowed for the conducting of lessons in real time with more than one student at a time. That is, teachers were able to construct small classes of students and talk to them over the radio. In this way, radio transmissions (as a mode of delivery) were added to correspondence schooling methods. This meant the teaching methodologies of the distance education teacher expanded.

With the growing ubiquity of the telephone in homes, conference calls became possible. As with the HF radio, the telephone has allowed teachers to construct small classes of students and to teach them in real time through the technology-mediated mode of the telephone. For some geographically remote and isolated students this has been a very recent experience. The Convenor of the Communications Portfolio of the ICPA reported to its 29th Annual Conference (August 2000) about the outcomes from the Charleville Telephone Teaching Pilot in Queensland. He reported that ‘my most treasured comment about the telephone teaching mode came from one young student during the very early trials at Charleville, “I can tell if the teacher is pleased with me”’ (ICPA 2000: 73).

In comparison to distance education, ‘face to face’ schooling until recently has not used telecommunications in teaching and learning. In the May 15 1940 official South Australian Departmental publication, The Education Gazette, the following notice was placed.
Frequently it is necessary for this Department to call Head Teachers to the telephone. This is not done unless the matter is urgent, and yet it is not uncommon for a Head Teacher, after he receives a message from the local post office that he is needed on the phone, to delay quite a long time before ringing this Office. Teachers are asked to assist the Department by coming to the telephone immediately they are called. Teachers are requested not to telephone this Department unless the matter is so urgent that it cannot be set out in writing (Education Department, Adelaide 1940: 112).

It is clear from this notice that individual schools did not have a telephone each, even for administrative purposes. The Department would ring the local publicly owned post office. They would send a message to the school. On receipt of the message the Head teacher (all of whom were men), was expected to make his way quickly to the post office to return the Department’s phone call. It is a recent phenomenon to advocate the use of digital technologies and therefore require access to telecommunications services from within classrooms.

The use of both the HF radio and the telephone in distance education have added value to the traditional correspondence style materials developed and posted out to students. In the late 1970’s and 1980’s, teaching materials were broadened to include not only the HF radio or telephone, but also the use of audio and video tapes. Most recently however, the convergence of the technologies available through satellites, telecommunications and computers has seen the emergence of ‘online learning’. This allows teachers to bring together into one package the individual components that have been used in distance education materials in the 20th Century: text, graphics, video and audio, and to combine that with the power of telecommunications.

The specialist distance education teacher today then, has a variety of platforms available for use in teaching. Methodologies now include using written materials (such as books and magazines), HF radio and/or telephone lessons, audio and video materials, and the use of digital technologies such
as CD ROMs and the Internet. Software such as WebCT™ and Blackboard.com™ provide platforms for teachers and students to establish an online communication base for the facilitation of distance learning. All these are now a part of the methodologies toolkit available to the specialist distance education schoolteacher. They are all used however in a way that means the teacher-student relationship is mediated through the use of the technology. To this extent then, traditionally distance education teachers have been using technologies of varying sorts to overcome the problems generated by geographical isolation, and therefore to overcome the boundaries presented by time and space.

As these additions to the distance education teacher’s repertoire have occurred at a system or statewide level, the provision of distance education has been broadened. It has moved from only providing education to rural, remote and isolated individuals, families and populations, to providing education to school age students unable to attend classes for a variety of reasons including for health reasons, due to behavioural difficulties that see students removed from ‘face to face’ schools, because they are itinerant, or because they have been sent to prison. These conditions for enrolment are reasonably consistent in each of the distance education schools across Australia (cf Education Department of Western Australia 1999a; DETE (South Australia) 1999a).

The broadening of the use of distance education has meant that students can be ‘isolated’ within a city as well as by geography, depending on their personal circumstances. Distance here, no longer holds the previous implications of vast and remote physical space. At the same time too, rural and area schools have increasingly accessed distance education offerings to broaden the curriculum from that which solely can be provided within the school. In more recent times, accessing of distance education has been used by public and private metropolitan, country and rural schools in order to provide broader curriculum offerings to individual students or small groups;
usually where the school is unable to provide the curriculum opportunities itself.

In the late 1990’s (as was indicated in Chapter One), for the first time in the history of school level distance education provision in Australia, there has been the emergence of private providers. Two Australian initiatives in this area were worldschool.com, which provided an online tutorial service; and in New South Wales, where a private distance education school called netgrammar, sought registration as a school.

**Relationships Are Important**

Throughout the history of the provision of distance education in Australia, the traditional importance of the relationships between the student and the teacher, and the teacher and the parent or home supervisor, have been reiterated. This began from the instigation of correspondence education. Reading the early letters by teachers to students, it is clear that they were written with the specific aim of establishing a rapport between the teacher and the student (cf Correspondence School of South Australia 1920, 1921, 1922). It is apparent from these letters that the distance education teachers knew each of the student’s personal situations and noted any changes to these over the course of the year, in their School Journals. The following extract written by a correspondence school teacher is illustrative: ‘Mrs Morphett’s 5 children from Mulgundawa are progressing very favourably, considering they have had no schooling, but that which their mother has given them in spare moments’ (Correspondence School of South Australia 8 December 1920: (page unnumbered)).

To facilitate the teacher-student relationship, distance education schools have recognised the importance of students and parents meeting their teachers, even if this was only a couple of times a year. This was to support and maintain the relationships in the absence of physical contact, over distance and time. A newspaper article with the headline They came hundreds of miles to SEE their teacher relates the following story.
Little Judith Dearman, after her 200-mile journey from Oakdale Station suddenly caught sight of Mr Penberthy. She needed no formal introduction. Brushing past her mother and father she ran up to her teacher and hugged him (Richardson, J. 1962: 2).

Subsequently, the use of technologies such as the HF radio and telephone to establish small classes of students was in part undertaken to develop the social purposes of schooling, as well as the directly educative ones related to a subject area. Discussing the activities of the Broken Hill School of the Air, the following extract from the newspaper The Sunday Mail, illustrates this.

Each morning the children are encouraged to speak to their teachers, to talk of themselves, their homes, their parents, their pets – and some thoughts. … The headmistress Miss Phyliss Gibb said: “We can hear how they pronounce words. A correspondence course cannot do that” (Sunday Mail 1958: 3).

The students and parents participating in this study also commented upon the importance of having some telephone lesson time allocated to unstructured social talk to support the building of personal relationships between classmates and between the students and their teachers.

With the emergence of digital technologies policy initiatives these technologies are available to both ‘face to face’ and distance education schools. This means there is a potential convergence between the roles of distance education and ‘face to face schools’. Theoretically every school can be a provider of distance education. This ought to herald a renaissance for listening to the experiences of specialist distance education teachers, where perhaps one message could be that we are all reminded that in schooling, relationships are important (cf Connell 1985; Elias, Zins, Weissberg, Frey, Greenberg, Haynes, Schwab-Stone and Shriver 1997).

**Critiques Of Distance Education**

Traditionally, the provision of distance education has not been viewed with the same esteem as ‘face to face’ schooling. As the State University of California academic Theodore Roszak stated on an Australian radio...
program, the ‘correspondence school … has always been considered second-rate education, and it still is second-rate education’ (Australian Broadcasting Corporation (ABC) 2001: 17). Along similar lines, a principal of a ‘face to face’ school, taking part in this study stated that ‘open education [referring to distance education] has always been subject to the claim of, you know, it’s people who are refugees from the classroom’ (YZ 8 July 1999: lines 529-530).

Distance education schools traditionally have been used strategically by education departments to locate a small number of teachers who have been deemed should not be in direct physical contact with children. Teachers are placed in this manner for poor work activities such as being disciplined for certain inappropriate actions, because legal proceedings are pending against them, or because they are unable to perform their duties to an appropriate standard within a classroom. It is believed by those working in distance education schools that this has affected the culture of these schools and the esteem with which they have been viewed (cf AZ 26 July 1999). It has not been the traditional practice either, for education systems to listen to the experiences of distance education teachers, albeit that they undertake their work using a variety of technologies (cf EF 13 July 1999; MN 20 July 1999). If there are messages that may be applicable from the experiences of distance education specialists to the work of ‘face to face’ teachers, little attention seems to be paid to heeding these messages. Yet now too ‘face to face’ teachers are being asked to learn how to use digital technologies, including incorporating them into their teaching and learning repertoire. These tasks are new for many of them.

While the provision of distance education has been one mechanism by which schooling systems in Australia have provided free, compulsory schooling to those unable to physically attend schools, to manage the schooling systems, each state and territory has established centralised administrations, while at the same time they have proclaimed their
uniqueness from each other. It is to this tradition of uniqueness we will now attend.

**A Tradition Of Uniqueness**

It was noted by Partridge (1973) that the original Education Acts of the respective states, were almost identical. The legislative similarities across the states remain so, particularly in relation to how schooling should be provided. That is, there are consistent requirements that students physically enrol and attend school within identified timeframes, and for the ‘instruction’ to occur within a school building. There are financial and other penalties to individuals if this does not occur. As indicated earlier, to change this legal requirement for physical attendance at school (outside the existing provisions to enrol in a distance education school), requires amendments to the respective Education Acts.

Alongside of this, it is asserted here that there is a tradition in Australia that purports that each state’s and territory’s demands are different, thereby making each state and territory unique. This is reflected in the following two extracts from national reports: the first taken from a Review of Education in Australia 1948-1954 prepared for the Australian Council for Educational Research (ACER) (a commonwealth government funded body), and the second from the National Report on Schooling in Australia: 1996 prepared on behalf of MCEETYA.

Observing changes to the school education administrative developments across Australia, the Review of Education in Australia 1948-1954 noted that ‘developments have taken place in all states. Arising as they do from local conditions and needs, it is not expected that the changes in any one state will be paralleled in the others’ (McDonnell, Radford and Staurenghi 1956: 59). A similar view was expressed forty years later by MCEETYA when it stated: ‘variations evident in the schooling provided for young people in Australia in 1996 stem from the diversity in those States in such areas as
population size and composition, history, physical size and features, past
development and economic outlook’ (MCEETYA 1999b: 1-2).

It can be argued that the variations referred to here is in part due to the
respective state and territory governments (rather than the commonwealth
government), having the constitutional and major financial responsibilities
for the provision of schooling in Australia (MCEETYA 1999b). Additionally, it is argued that this demonstrates the considered importance
of demographics and geography for determining schooling policies in
Australia.

In the past, this uniqueness of each of the states and territories has been used
to argue against involvement or commitment by a state or territory to a
national initiative. The views of New South Wales concerning the
development of the National Statements and Profiles (cf Curriculum
Corporation 1994) by the then Minister for Education, provides a case in
point. Minister Chadwick stated prior to a meeting of Ministers of
Education in July 1993, (where there was anticipation of agreement to the
National Statements and Profiles), that ‘NSW is committed to retaining its
right to develop curriculum for students in NSW’ (Chadwick 1993: 1 in
Eltis 1993: 11). This meeting failed to ratify the National Statements and
Profiles. This illustrates that national collaboration on national curriculum
initiatives, has tended to be finely balanced (Eltis 1993).

Rejecting the National Statements and Profiles was achieved politically by
the Ministers in the four non-Labor states and the Northern Territory voting
together not to endorse the national curriculum plans (MacPherson 1993).
The then commonwealth Minister for Education Kim Beazley described the
decision as one harking back to the times prior to 1988, to the parochialism
that he saw as holding back national developments (MacPherson 1993). (In
1988 the then Ministers of Education had agreed that there could be mutual
benefits gained from processes of national collaboration. Lingard and Porter
(1997) argue that the substantial cuts in Commonwealth grants to the states
in 1987 made national collaboration on school curriculum an attractive proposition.) This episode with the National Statements and Profiles reflects that the perceived uniqueness of the states and territories and any enthusiasm for moving into national or federal arrangements, tends to be a contested matter. The claimed uniqueness of each state and territory however, can be called upon to perform what otherwise look like direct political acts.

Due to the size of each respective state and territory schooling system however, with their respective budgets being the second largest items after health, there are economies of scale that are possible with combined efforts. At the 2001 meeting of the Australasian Curriculum, Assessment and Certification Authorities (ACACA) the (then) New South Wales Minister of Education, John Aquilina referred to the desirability of a new ‘cooperative federalism’ to emerge. It will be argued in the next chapter that advocating the use of digital technologies as a core policy requirement is bringing national collaboration, or a ‘new federalism’ (Lingard, Porter, Bartlett, and Knight 1995), back into focus, simply from the perspective of economies of scale. This has the capacity to challenge the tradition that each state and territory’s circumstances are sufficiently unique to maintain independence from each other. This issue is debated further in Chapter Five.

Centralised Or Decentralised?
Alongside of the tradition that each state and territory is unique, which has traditionally underpinned how each of the states and territories has conceived of itself, several historians of Australian school education have made the observation throughout the 20th century that the provision of schooling across Australia is highly centralised (Butts 1964; Hyams and Bessant 1972; MacLaine and Selby Smith 1971; Portus 1937; Turney 1975). The Report of the Committee of Enquiry into Education in South Australia in 1969-70 summarised the situation in that state at the time, as follows:

the Education Department began as a small centralised and hierarchical body. At least until recently the policies of the
Department have been developed in much the same manner, so that policy initiated at the highest level has been handed down through the various strata of authority to the teachers in the schools to implement (Education Department in South Australia 1971: 453).

Connors (2000), reporting on the outcomes from the ‘Karmel Report’ (Karmel 1973) noted that Australia’s public school students were located in ‘centralised public systems operated by the States’ (Connors 2000: 5). MacLaine and Selby Smith (1971) have observed that it was an outstanding achievement to provide universal schooling across such a large, and in parts, sparsely populated continent ‘under the direction of the highly centralised system of educational administration in each state’ (MacLaine and Selby Smith 1971: 5). Traditionally then, the organisation of the provision of universal education within the states and territories has been managed centrally and hierarchically. The extent of that centralisation however, has been problematic due in part to the tension that exists between the legislative requirement for accountability of government funds, and the administrative question of what are the best arrangements for the delivery of schooling to students, as the following chronology of debates regarding this issue illustrates.

Since the Education Acts within each state were proclaimed there has been debate about the level of centralisation or decentralisation that is required for the administration of these education systems (Turney 1975). In the covering memo to the Secretary for Public Instruction that accompanied the Annual Report of 1887, the General Inspector in Queensland, Mr Ewart concluded by stating

in any decentralization schemes that may be planned for the better working of Government Departments in the interests of the country, it might be considered whether, in regard to this Department, it would not be a gain to the public, as it certainly would be a great relief to the central office, to arrange so that the District Inspectors, who are at present purely examining and reporting officers, may deal with hundreds of the petty questions which are now referred directly

Commissions of Inquiry in the 1870’s and 1880’s reported that lack of local involvement and centralised authority systems were problematic and as a result there were varying attempts and different models proposed for the decentralisation of the various schooling systems in Australia (Turney 1975).

In 1948, a trial of a model of decentralisation was conducted in south-western NSW.

The Murrumbidgee Regional Area, consisting of the four Riverina inspectorates of Albury, Griffith, Temora and Wagga Wagga, was established as the responsibility of a Director of Education with headquarters in Wagga Wagga. The formulation of educational policy remained the prerogative of the department of Education, Sydney, but the ‘Area’ Director was responsible for implementing policy in his area as well as controlling various local administrative functions (McDonnell, Radford and Staurenghi 1956: 59).

Around the same time Queensland was also decentralising its provision of public schooling which saw the central office of the Education Department retaining responsibility for general state policy, provision of new and closure of old schools, appointment of head teachers of schools with more than one teacher, transfer of teachers from region to region, appointment of staffs of secondary and technical schools, and to other matters (McDonnell, Radford and Staurenghi 1956: 61).

Just over a decade later the Report of the Committee of Enquiry into Education in South Australia in 1969-70 stated that
two types of decentralization require consideration. The first involves the inclusion in general policy decisions of people outside the Department; this type of decentralization may occur at the central, or at regional or school level, or at all three. The second involves the devolution of authority within the Education Department itself. Here it may take the form of dividing the single school system which at present exists into a number of smaller separate systems, each duplicating in miniature the present administrative structure; or of delegating a range of decision-making to regional officers or to schools themselves within the framework of a single education department. In the case of decentralisation by an increased autonomy at the school level, delegation may be to the headmaster alone, thus preserving the principle of hierarchy, or delegation to the headmaster of powers used in consultation with other teachers, each teacher having the duty of making decisions which affect his own teaching and of partaking in decisions affecting the school as a whole (Education in South Australia, 1971: 461).

In the ACT devolution of decision-making to school boards has been a feature of government education in the ACT since 1976 (cf Aitkin 1999). Connors (2000) has explained however, that calls for devolution in the 1970’s were made with the assumption that the large scale public schooling systems were dominant and indestructible. Accepting this, the calls for devolution were a ‘subversive attempt to make these systems more open, democratic, flexible and professional in their operation’ (Connors 2000: 9). Blackmore (1999) argues however, that the Menzies’ commonwealth library and science grants and the recommendations of the Karmel Report heralded the blurring between public and private funding for schools; a precursor to the effects of devolution on schools within an educational market.

The most recent ‘wave’ of models for decentralising the various state and territory schooling systems has occurred throughout the 1990’s. Across most of the states and territories (and consistent with trends overseas), there have been moves towards what is called, ‘local school management’, or
‘self-managing schools’. In South Australia this has been referred to as ‘Partnerships 21’; in Victoria under the previous Liberal government (1992–1999) the local school management initiative was referred to as ‘Schools of the Future’; and in Queensland there is the ‘School-Based Management policy’ (cf DETE (SA) 1999b; Queensland Government Education Queensland) 2001; State of Victoria 2000b). This has seen some of the previously centrally controlled functions relating to the management of schools moved to the local or school level. Essentially this has meant that at the local level, schools have been managed by principals in collaboration with the school council to undertake certain tasks previously undertaken by the central agency. The roles and responsibilities of both principals and school councils however, remain covered in each state and territory’s legislations and regulations.

A criticism associated with the centralised character of Education Departments has been the degree of standardisation and uniformity that is generated through the curriculum and programs provided to students. Each of the Education Acts over time and to varying degrees, has specified the nature of the curriculum to be taught in that state (Partridge 1973). Historically however, policy work such as the goal setting of education systems, including the nature of the curriculum, has been an administrative rather than a political decision and proposals for close Ministerial control of the curriculum have been highly contentious (cf Maclaine and Selby Smith 1971). Lingard et al (1995) have argued that there has been an increase in the ‘ministerialisation of policy processes’ (Lingard et al 1995: 59), that has occurred since the Hawke/Keating periods of leadership in successive federal government during the 1980’s and 1990’s.

One of the articulated motivations for developing more decentralised administrative arrangements for schooling in Australia throughout the 20th century has been to provide communities with more control over the nature of schooling in their local school (DETE (SA) 1999b; Education in South Australia 1971; State of Victoria 2000b; The State of Queensland 2000). In
1999, the Victorian government changed and with the arrival of the new government a review of public education was held. An outcome from this broad ranging review in relation to self-managing schools was that the theme of the next stage of governance should be enhanced self-management. Under this approach, the capacity of schools and their communities to exercise local authority will be strengthened in a number of respects. Self-management in each school will be better resourced and will be nested in a network of local schools, within the framework of Government policy and public accountability. … A distinctive feature of public schools is that they are fully and publicly accountable for all aspects of their operation. Their accountability works in two directions. Each public school is responsible to the Government for the exercise of its responsibilities. It is also accountable to its local community (partly through the school council) for the program that it delivers and the outcomes that are achieved (State of Victoria 2000a: 26-27).

The ongoing problem of ensuring accountability for the use of government funds and the control of centralised policies however, is at the crux of the dilemma regarding the issues concerning the level of centralisation or decentralisation that should exist in the administration of public schooling in Australia. Consistently however, central agencies have held onto the policy development and accountability mechanisms.

Turney (1975) explains this problem concerning the extent of responsibility to be exercised at the centre compared to that exercised at the local level as follows:

flexibility of approach to administrative responsibility has tended to obscure the anomalous situations which arise when the exercise of local responsibility comes into conflicts with ministerial prerogative. The successful adoption of any scheme of administration which does not recognize the central interest of political responsibility is remote (Turney 1975: 49).

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Over the past century then, there have been various attempts to move away from the level of centralisation that government education departments have historically exercised. In the later part of the 20th Century debates about the extent to which government education departments should decentralise have been accompanied by concerns about the privatisation of schooling within an educational market (Blackmore 1999; Connell 1998). Within the declared state policy environment of decentralisation, how school education departments manage the introduction and use of digital technologies then, becomes complex. Specifically in relation to the stated objectives outlined in the policies advocating the use of digital technologies in schools, can generate tensions between centralising and decentralising actions. To illustrate this point a distance education director, predicting the implications of using online content, commented in a conversation as part of this research that ‘the traditional model of centralising, or creating regions for educational delivery are progressively going to get broken down more and more’ (CY 17 August 1999: lines 49-50). This is not suggest however, that technologies only have a decentralising effect (cf CY 1999; Castells 2001). This is a matter that is discussed further in the next chapter.

In summary then, it has been argued in this chapter that interpreting the past requires interpreting the history and traditions, including the constitutional and legislative arrangements that have informed the organisation and structure of universal public schooling in Australia. It is argued that this is necessary in order to undertake a study of the policies advocating the universal use of digital technologies in schooling. The legal guarantee of ‘free, compulsory and secular’ schooling has been enshrined in the respective state and territory school education legislations. Attendance at a physical place called ‘school’ has been one feature distinguishing ‘face to face’ schooling from ‘distance education’.

Distance education has been deliberately included here along with the ‘face to face’ contexts of compulsory schooling. It is being argued that the use of digital technologies in specialist distance education teachers’ work has been
an extension of the history and traditions of using other technologies to overcome teaching and learning difficulties created by distance in time and space. As such, juxtaposing distance education with ‘face to face’ schooling will continue throughout the thesis in order to provide a fuller picture of the provision of universal public schooling in Australia.

Alongside of the legislative guarantee that public schooling in Australia is ‘free, compulsory and secular’, it has been argued in this Chapter that the respective Education Acts are similar. The policies and the administrative arrangements of the schooling systems have a history and tradition of being centrally constructed. It has also been asserted that each state and territory is unique. It is these traditions that it has been argued are important to recognise as we move to the present day, where the task is to interpret and understand the implications of the policies advocating the ubiquitous use of digital technologies in schooling.
CHAPTER FIVE

UNDERSTANDING THE PRESENT

Interpretations of the past it has been argued, help to understand the present, with the carriage and ongoing development of history and traditions achieved through the use of language and stories. In addition, Apple (1986) has suggested that the debates in schooling ‘have all too often remained on a very abstract level, rather than taking the tools and actually applying them to the concrete history and reality of the policies and practices involved in the organization of teaching and curriculum’ (Apple 1986: 8). Taking Apple’s (1986) advice, the purpose of this chapter then is to draw upon the interpretations of the past outlined in Chapter Four and use these to develop interpretations and understandings of the present, with the aim of pointing the way to some of the possible answers to what public schooling may mean in Australia in the 21st century.

As indicated in Chapter Two, to understand the policies advocating the ubiquitous use of digital technologies in schooling depends upon interpreting the whole, but to do this requires interpreting the parts. That is, the process of interpretation is circular, moving between the whole and the parts. The determination of meanings is developed through these interactions. The interpretative process therefore is iterative or as Ricoeur (1984) indicates, it is a spiral of sense-making. He says we ‘carry the mediation past the same point a number of times, but at different altitudes’ (Ricoeur 1984: 72). This chapter adopts this process by taking different swoops at the task, and to do so has been organised into four sections. In the first section, the process of sense-making begins with naïve (Ricoeur 1984) interpretations of the policies and budget texts. The second section moves between interpreting the parts of policies as well as the whole. These interpretations then lead into the other two sections of the chapter where more complex understandings are developed.
The naïve interpretations of the policies and the budget texts presented in the first section of the chapter provide foundational information about present policies, which sets the scene for the arguments outlined in the other three sections of the chapter. To do this, the following three questions are considered in this first section: ‘who is authoring the policies advocating the ubiquitous use of digital technologies in schools?'; ‘how much government funding is provided to accompany these policies at the state and territory levels?'; and ‘for what purposes are the funds allocated?’ As Ricoeur (1988a) argues, it is from authors that ‘the strategy of persuasion that has the reader as its target starts out’ (Ricoeur 1988a: 159). He continues by stating that ‘it is to this strategy of persuasion that the reader replies by accompanying the configuration and in appropriating the world proposed by the text’ (Ricoeur 1988a: 159-160). Therefore, in addressing these three questions in this first section of the chapter, the authors and the authority of the policies are identified, and the state and territory budgets allocated to implement the policies are summarised. This provides insights into some of the worldviews legitimated through the use of government policies and budgets. In this first section some implications arising from the policies and budget texts for the organisation of the public sector are also considered.

The research for the first section of this chapter has been undertaken using commonwealth, state and territory government Treasury documents, publicly and easily available information gathered from the Internet, and hardcopy documents available from the various governments and their departments. Care has been taken to ensure the veracity of the information gathered. The policies and the budget texts therefore provide insights into the persuasions of the authors (that is governments), and the extracts from the transcripts of the research conversations provide a richness and depth of experiences, which add to the insights of the persuasions of governments, available through the policies and budget texts.

In the second section of the chapter a deeper understanding of the policies
is sought. There is a circling back to interpret and understand in more depth the use of language in the policies and budget texts. This involves a movement between the whole and parts of policies. Understandings of what is intended by the policies are informed by some of the theorising currently developed for interpreting the rhetoric of using digital technologies in schooling. This includes the development of understandings about individual words and phrases described here as ‘recurring motifs’. These are considered metaphorically as the ‘recurring motifs’ of the ideologies evident in the texts. This is to move into the ideological role of policies and budget texts.

Ricoeur (1988b) argues that the ‘privileged place of ideological thinking occurs in politics; there the questions of legitimation arise’ (Ricoeur 1988b: 12). He argues further that ‘ideology’s role is to make possible an autonomous politics by providing the needed authoritative concepts that make it meaningful’ (Ricoeur 1988b: 12). As such, it is through the processes of authority and legitimation that policies gain their meaning and through which interpretations about their meanings become possible. This is to make a bridge between the theory of reading and the role of ideology in reading texts, as was outlined in Part I and in particular, Chapter Two of this thesis.

The third and fourth sections seek to develop still deeper understandings in order to make meaning of what can be understood by public schooling in the 21st century. The third section outlines and debates two narratives evident in the policies and budget texts: these have been labelled as economic and educational narratives, and are considered to sit in counterpoint to each other. The fourth and final section in this chapter describes a specific story, that of the purchase of state-wide Microsoft® licences by the respective education systems. The ‘Microsoft® story’ provides the basis for Chapter Six, where scenarios for the future are proposed.
IDENTIFYING THE PRESENT

In order to qualify as ‘the present’, the events or actions of a given point in time must be a part of an integral and functioning temporal configuration (Carr 1986). That is, there must be a past, a present and a future. In the previous chapter an interpretation of some histories and traditions of public schooling in Australia were discussed. Drawing on this past, this chapter considers ‘the present’ as the actions and events occurring within the identified period for researching present public schooling sector digital technologies policies, that of 1997-2001. This period of time can be thought of as sitting temporally between the historical perspectives presented in Chapter Four and the possible scenarios for the future, to be discussed in Chapter Six.

Such an approach however, is not to suggest that the past is dead and gone, and that the present is a newly constructed period of time, free from the influences of the past. The approach taken here is to recognise the dialectic existing between the past and the present. As Taylor et al (1997) indicate, policies always have a prior history of significant events, a particular ideological and political climate, a social and economic context – and often, particular individuals as well – which together influence the shape and timing of policies as well as their evolution and outcomes (Taylor et al 1997: 16).

Similarly, Ricoeur posits that interpreting the present occurs through an exchange between the ‘interpreted past and the interpreting present’ (Ricoeur 1988a: 221).

For Ricoeur, there is not a dead temporal distance between the past and the present but a transmission that generates meaning: ‘we are never in the position of being absolute innovators, but rather are always first of all in the situation of being heirs’ (Ricoeur 1988a: 221). As such, the past is both detached from the present and taken up and merged into it. That is, there is a cycle of sense-making. Ricoeur argues that this is achieved through the use
of language: ‘the institution of institutions’ (Ricoeur 1988a: 221). Ricoeur (1988a) intends that we not only understand the use of language as a system of communication, but that we also understand the past. He argues that this occurs through the transmission of traditions. Through tradition he argues ‘we understand the things already said, insofar as they are transmitted along the chains of interpretation and reinterpretation’ (Ricoeur 1988a: 221). Achieving interpretations of the present then, requires understanding how the work of the text can show us the world, including those understandings provided through traditions.

It was asserted in Chapter Two, that understanding did not consist of the ability of readers to project themselves into the text but rather to ‘receive an enlarged self from the apprehension of proposed worlds which are the genuine object of interpretation’ (Ricoeur 1988b: 183). That is, the text provides a proposed way of being in the world. It was also argued in Chapter Two that objectification of the meaning of a text places a distance between the reader and the writer (Ricoeur 1988b). To enable the ‘appropriation’ of meaning, or to make the meaning one’s own, Ricoeur (1988b) argues that interpretation makes the text meaningful for the present reader, where the interpretation is complete in present time. The interpretation becomes an event, and understandings are achieved.

It will be important to remember when reading this chapter to recognise that those controlling the economic and cultural apparatuses of society largely determine what meanings are seen as the most important, what experiences are considered the most legitimate, and what forms of writing and reading matter (Giroux 1990). As Giroux (1990) states, ‘we need to understand the relationship among writers, readers and texts as sites where different readings, meanings, and forms of cultural production take place’ (Giroux 1990: 367). It is with this advice from both Ricoeur and Giroux then, that we set off to interpret, and to develop understandings, in order to make meanings about the policies and budget texts advocating the ubiquitous use of digital technologies in Australian public schooling in the 21st century.
SECTION ONE
INTERPRETING THE POLICIES AND BUDGET TEXTS AND CONTEXTS

State, territory and federal governments, and private industry in Australia have and are continuing to invest funding into the use of digital technologies as central reforms within the respective state and territory schooling systems (Moyle 1999, 2000). The commitments of resources are linked to federal, state and territory ‘whole of government plans’ for the ‘information economy’ (cf Commonwealth of Australia 2001a; Commonwealth of Australia NOIE 1998a). The following section considers the ‘whole of government’ directions at the federal and state or territory levels that advocate using digital technologies in schools. These are discussed in relation to the state and territory legislative responsibilities for schooling. Before proceeding however, a brief interlude is taken here to outline what is intended by the phrase ‘whole of government’, and to consider its implications for the structure of the public sector. This provides the present organisational context within which to appreciate the intentions of the policies and budget texts.

Centralised ‘Whole Of Government’ Initiatives

A ‘whole of government’ initiative at either the state or federal level is understood to mean that its’ policy directions are intended for every government department and public organisation, such as a statutory authority; hence it is intended for the ‘whole of government’. It is asserted that the construction and management of ‘whole of government’ initiatives occur through centralised mechanisms for public policy development and implementation. In relation to the policies advocating the use of digital technologies in the schooling sector, these are linked to federal and state or territory ‘whole of government’ responsibilities.

At the same time however, ‘whole of government’ initiatives are also considered as an ‘horizontal’ organising concept of the public sector, where the policy initiative is intended for adoption across the full spectrum of government operations. This is in contrast to a single departmental
initiative where the implications of the policy flow vertically up and down the department or organisation. It will be demonstrated however, that both mechanisms use centralised arrangements within the public sector.

Public Sector Structures

Each government in Australia is grappling with the best way to organise the public sector in order to accommodate the administration of policy initiatives concerning the use of digital technologies (Moyle 1999). Developing from the ‘whole of government’ policy directions are ‘horizontal’ organisational structures within the public sector. The phenomenon of these emerging structures was raised in one of the research conversations held with a senior commonwealth public sector bureaucrat.

It’s one of the really tricky things to do, because government departments are normally divided on subject matter lines. Someone deals with employment, someone deals with education, someone deals with tax. So you have a vertical division hierarchically based on subject matter categorisation. Information technology by definition and communications issues, cut horizontally, across those departments, and how you coordinate a horizontal cutting issue in a vertical hierarchy is always fun. And both this government and the previous governments have been attempting to get a coordinated view, and certainly this government has been moving to centralise functions within Senator Alston’s department. It is shown in its change of name in the most recent administrative changes where it moved from being the Department of Communications to being the Department of Information Technology, Communications and the Arts, sorry, Communications, Information Technology and the Arts. Right. And it has a broad coordinating responsibility for all of these issues (EF 13 July 1999: lines 204-220).

The Victorian Department of Education, Employment and Training (DEET) uses the description of ‘cross portfolio’ to refer to ‘horizontal relations’ in that department. It states that this approach will ‘improve
access to and skill development in information and communication technology and foster innovation throughout the education and training system’ (State of Victoria 2001a: 7). The problem of determining how to organise government departments to address policy issues concerning the use of digital technologies is also being wrestled with in European countries, the United Kingdom and the United States of America (cf Margetts 1999; Frissen 1999). Indeed Frissen (1997) suggests that ‘horizontal relations are becoming more important than vertical relations’ (Frissen 1997: 115). It is the relationships between the ‘horizontal’ and the ‘vertical’ organisational structures, or the links between centralised and decentralised structures, that now requires some consideration.

Centralised or decentralised structures?
The South Australian ‘whole of government’ policy statement Information Economy 2002 says that ‘networking [using information technologies] is breaking down centralised activities’ (State Government of South Australia 2000: 7). Alvin Toffler (1980) has argued decentralisation can occur through the use of digital technologies and this will inevitably lead to decentralisation of government processes. He states that

   it is not possible for a society to decentralize economic activity, communications, and many other crucial processes without also, sooner or later, being compelled to decentralize government decision making as well (Toffler 1980: 234).

Heeks (1999) also asserts that digital technologies support decentralisation of decision making in government. Frissen (1997) argues that digital technologies have the capacity for decentralisation of control. He states that ‘central control of big mainframes can be replaced by mechanisms of local empowerment. Small, intelligent and flexible units represent the organisation of the near future’ (Frissen 1997: 114). He goes on to comment however, that ‘this same tendency for increased capacity makes all kinds of large-scale operations feasible’ (Frissen 1997: 114). Frissen (1999) also asserts that digital technologies are inherently bureaucratic because of their ‘standardising and formalising characteristics’ (Frissen 1999: 34).
The standardising and formalising characteristics of digital technologies is considered as one of the rational ways efficiencies can be achieved in public schooling. As digital technologies are machines, to use them requires adherence to the necessarily predetermined, structured programming that makes them work. Additionally, their use within a network of social situations such as that of public schooling systems, or more generally in the public sector, requires the establishment of agreed, standardised and formalised patterns of work.

Dutton (1999b) argues however, that early views in the 1970’s and 1980’s, concerning the organisational implications of using digital technologies saw that they had the capacity to increase centralised control in organisations. Centralisation of control through the use of digital technologies can be exercised for example, through the establishment of standards of operability. The structuring effects of such standards requires an agency for determining these requirements and for others to use them, as the following statement from South Australia illustrates: 'schools will be provided with corporately developed sets of technical standards for networks and design templates suitable for schools’ (DETE (South Australia) 1999c: 8).

Reporting on research from the 1980’s, Dutton indicates that instead of digital technologies inevitably creating increased centralisation in an organisation, those who control the decision making ‘tend to adopt and use ICT’s [information and communication technologies] in ways that follow and reinforce existing patterns of control within the organisation whether they be highly centralised or decentralised’ (Dutton 1999b: 28). Dutton saw the nature of the control and use of digital technologies as a question of ‘who has access to the skills, equipment, and know-how essential to design, implement, and employ technology’ (Dutton 1999b: 24).
It was indicated in Chapter Four that there has been a tradition of centralised policy-making and administration within the respective public schooling systems. A chief executive officer participating in this research however, saw the vertical, or central organisation of schooling systems as problematic, as the following extract demonstrates.

The fact that education is, while it pretends to be democratic is actually particularly hierarchical, not that hierarchy and democracy are incompatible but education pretends to be flat, and in fact is vertically organised, or vertically divided. So in order to achieve the maximum change you actually need a quite radical transformation at every level of the system. And that means system management structures flattening out and moving out of the way in lots of cases, both within schools and outside schools and that's really awfully difficult in a system as complex as the Australian education system. But the kind of cultural changes that you need are, I mean ironically consistent with what's happening in management in recent years. Flattening of structures, strengthening of horizontal communication, elimination of levels, elimination of structures which don't contribute to improvement. More devolved decision-making (GH 15 July 1999: lines 385-406).

The arrangements that see ‘horizontal’, ‘flatter’, ‘whole of government’ contexts for digital technologies policies at the federal and state levels, along with ‘vertical’ centralised policy contexts within the respective schooling sectors sees the tradition of centralised administration and policy development maintained and developed as a living tradition. This is occurring in a manner consistent with what Taylor et al (1997) describe as the ‘centralising/decentralising characteristics of corporate managerialism in education’ (Taylor et al 1997: 83). In defining corporate managerialism Taylor et al (1997) draw upon Yeatman (1987), Sinclair (1989) and Weller and Lewis (1989). Characteristics of corporate managerialism they identify are its reliance on highly rationalist approaches to management with centrally specified outcomes or outputs identified centrally for those at the
periphery to achieve. They argue that corporate managerialism is ‘plan-based’ and centrally managed. Such an approach requires that each school have a school development plan that is mandated by an officer with the authority delegated from the central office (Taylor et al 1997).

The following story by a retired school principal illustrates his experiences of corporate managerialism exercised by a state schooling system.

I was the principal of a primary school, which I’d opened from scratch, so I was the first principal. And we were a school of national importance and all sorts of things, so it really was an exciting place to be. And we had worked very closely with the community and all sorts of things. And what really put me right off was, [the new Chief Executive of the Department of Education], who I think is now gracing [another state of Australia] with his axe. I went to a meeting and he stood up and said, “now one thing I will never do is to tell a principal what to do in their own school, that's your prerogative. My prerogative is to run the system.” And I got back and I couldn't get into my office for fax paper, which was from [the Chief Executive] telling me where to breathe and how to sleep, and all those sorts of things. And I thought bugger this. I don’t need all that sort of crap. So I got out. And it worked all right, because I had worked for 35 years. And I’d never taken any long service leave (IJ 4 April 2000, lines 15-30).

There is an abundance of policies emanating from the federal, state and territory levels. Here it is argued, corporate managerialism is exercised in relation to the advocated use of digital technologies in schooling by both the commonwealth and each state and territory, who have whole of education department policies or strategic plans and policies concerning the use of digital technologies. Most states and territories require school level technology plans that address centrally identified goals, as the following statement from a South Australian document indicates: ‘at the school level the targets [described in DETE (South Australia)’s Strategic
Plans] are to be reflected in overall planning and more particularly in schools’ technology plans’ (DETE (South Australia) 1999c: 9).

In 2001, to draw upon the metaphor of the Russian dolls, the centrally organised, horizontal features espoused in ‘whole of government’ policies are complemented by state and territory ‘whole of government’ plans, into which schooling sector policies are intended to link, and into which individual school digital technologies policies and plans are intended to sit. Therefore, the ‘whole of government’ policy directions apply across the whole of the public sector, and at the same time the implementation of such policies requires coordination through centralised structures, using standardised programs, through to the local level. Furthermore, such an approach to policy development and implementation is intriguing to contemplate given that it will be demonstrated in this chapter that the schooling sector digital technologies policies are intended to be in a synergistic relationship with the commonwealth ‘whole of government’ policies, yet at the same time legislatively, and therefore politically, schooling remains the states’ and territories’ responsibility. Throughout this chapter then, it is pertinent to remember that inside the Australian states’ and commonwealth public sector apparatuses, there has been a rise of ‘corporate managerialism’ (Considine 1988; Lingard et al 1995, Wilenski 1988; Yeatman 1990), and this has been characterised by ‘a ministerialisation of public policymaking and a redefined minister-bureaucrat relationship’ (Lingard et al 1995: 41). In other words, there is a politicisation of the public sector.

**Policies, Policy Authors And Their Authority**

People construct State policies and budgets. This is contrary to Roe’s (1994) view that ‘budget texts have no author’ (Roe 1994: 24), and to concur with Pusey (1992) and Elaine Thompson (1990), who argue that government policies do have authors, indeed often multiple authors, where the construction of policies is regularly a struggle for who gains the dominant policy voice. Further, it was argued in Chapter Two that policies

The purpose here is to provide an overview of the schooling sector digital technologies policies, identify who are the authors of the policies and from where their authorisation is received. Since it was also argued in Chapter Two that to add to the legitimacy of policies, budgets are allocated to the policy initiatives, then so too the budget allocations for the identified initiatives will be outlined here as part of considering the policy authors and their authority.

Identifying the government departments contributing to the school level policy developments demonstrates through specific examples how the public sector is presently organised in relation to the advocated use of digital technologies in public schooling. It is argued that the policies mirror respective governments’ political will, and that this is reflected through the authority of Ministers of the Crown, who use their authority to legitimate the digital technologies policies.

**Commonwealth And National Policies**
In this chapter the authors of the policies and their associated budgets are considered to be both the Ministers of the Crown and senior officers in government departments with the authority of Ministers for that department to manage the policy development. A brief description of the role of each government department and agency authoring public policies is provided in Appendix Seven.

Major ‘whole of government’ initiatives at a commonwealth level specifically advocating the use of digital technologies in policies have occurred with the political authority of the Prime Minister (Commonwealth of Australia 1997; Commonwealth of Australia 2001a). Since December 1997 two major overarching policy statements have directed digital technologies initiatives at the national level: Investing for Growth (Commonwealth of Australia 1997) and Backing Australia’s Ability
These two policy statements have direct implications for the public schooling sector. These include setting the political scene, and establishing control of decision-making processes.

The policy statement *Investing for Growth* (Commonwealth of Australia 1997) outlined a $1.26 billion ‘whole of nation’ and ‘whole of government’ approach to economic development in Australia, directly linking the schooling sector with the economy as the following extract illustrates.

> Education, training and skills are the foundation on which the information economy will be built. These skills are one of Australia’s key competitive advantages and will attract high value industries as well as firms seeking to use Australia as a base for their involvement in the information economy (Howard 1997: 3).

Linked into *Investing for Growth* (Commonwealth of Australia 1997) is the *Strategic Framework for the Information Economy* (Commonwealth of Australia NOIE 1998a: 1). This framework ‘provides a vision statement and sets a national direction for Australia’s future in the information economy’ (Commonwealth of Australia NOIE 1998a: 1). The mission of this Framework is to ‘ensure that the lives, work and well being of Australians are enriched, jobs are created, and the national wealth is enhanced through the participation of all Australians in the growing information economy’ (Commonwealth of Australia NOIE 1998a: 6).

The framework identifies ten strategic priorities. The second priority is to ‘deliver the education and skills Australians need to participate in the information economy’ (Commonwealth of Australia NOIE, 1998a: 7). It states that education and training is a crucial underpinning to Australia’s success in the information economy. Our education and training systems must equip all Australians to be enterprising, innovative,
In 2001 the Prime Minister announced the plan, Backing Australia’s Ability (Commonwealth of Australia 2001a). This plan builds on a higher education white paper called Knowledge and Innovation (Kemp 1999a), and the previous over-arching federal plan Investing for Growth (Commonwealth of Australia 1997). The initiatives outlined in Backing Australia’s Ability (Commonwealth of Australia 2001a) are overseen by a committee that is essentially a sub-committee of federal cabinet. It comprises the ‘Prime Minister, the Minister for Industry, Science and Resources, the Minister for Communications, Information Technology and the Arts, the Minister for Education, Training and Youth Affairs and the Minister for Finance and Administration’ (Commonwealth of Australia 2001a: 13). Since the release of this policy, there has been a restructuring of federal government departments with the Department of Industry, Science and Resources, becoming the Department of Industry, Resources and Tourism, and the Department of Education, Training and Youth Affairs becoming the Department of Education, Science and Training (DEST). The release of Backing Australia’s Ability (Commonwealth of Australia 2001a) was accompanied by an announcement of a budget allocation of $2.9 billion over five years, with $159 million allocated for

**Backing Australia’s Ability** (Commonwealth of Australia 2001a) is an ‘innovation action plan’ and it claims that through stimulating, encouraging and supporting innovation, Australia’s international competitiveness and economic prosperity will be enhanced’ (Commonwealth of Australia 2001a). Schools are incorporated into this plan through the inclusion within it of $34 million over five years, for the development of online curriculum content (Commonwealth of Australia 2001a). This project is called Le@rning Federation (Schools Online Curriculum Content Initiative (SOCCI)) ((SOCCI 2001). Since the provision of curriculum is considered a state or territory responsibility, this commonwealth funding is matched on a pro rata basis by each of the Australian states and territories (Commonwealth of Australia 2001b), bringing the total funding available to $68.2 million.

Together these government policy statements reflect the political will of the government, and considerable intellectual as well as financial investment in moving Australia’s citizens into the ‘information economy’ and establishing an ‘information society’. These policies directly implicate schools in this process.

**Implications for the public schooling sector**

In response to the directions identified in **Investing for Growth** (Commonwealth of Australia 1997), public sector government departments’ organisational arrangements have been put in place. **Investing for Growth** (Commonwealth of Australia 1997) set the political scene for the commonwealth government to take the main policy leadership responsibilities in relation to the ‘information economy’, by stating that government leadership is important to ensure a high policy priority and profile for the information economy. The Government will set national priorities in a global perspective, encourage Australians to embrace the information age and lead by example. It will act as a
catalyst in its own use of information technology and encourage a coordinated approach across governments (Commonwealth of Australia 1997: 67).

Digital policy initiatives identified as part of Investing for Growth (Commonwealth of Australia 1997) and more recently in Backing Australia’s Ability (Commonwealth of Australia 2001a), have been and remain coordinated through the Department for Communications, Information Technology and the Arts (Commonwealth DCITA).

Given the horizontal arrangements described earlier, the national schooling sector digital technologies initiative Learning Federation SOCCI therefore involves both the commonwealth departments, DCITA and DEST (previously DETYA). This project however also includes the direct involvement of two Ministerial companies: Education.au and the Curriculum Corporation. The public sector organisation of this project then, can be considered as having a national, centralised, horizontal organisation. The language of the memos and briefings prepared in regard to this initiative are indicative of this. The following extract is from a briefing paper to the Conference of Education Systems Chief Executive Officers (CESCEO) and MCEETYA. It indicates that Learning Federation SOCCI is a national project stating that there are four steps in its strategy. These are to

1. develop a body of nationally funded content;
2. develop the nationally funded material within a framework that supports both distributed access and distributed development by member jurisdictions;
3. use the framework and the base of nationally funded material to stimulate further contributions to a pool of nationally accessible material, meeting nationally agreed standards; and
4. design the framework to be increasingly self-supporting once the initial nationally developed material is completed (SOCCI 2000: 2).
While the language is of a ‘distributed approach’, which implies a decentralised approach, the model requires control by centrally established standards of operability. To achieve this, national standards are in the process of being established in collaboration with member jurisdictions (that is the state and territory schooling systems), and to which the member jurisdictions will have to conform in order to access and contribute to the ‘pool of nationally accessible material’. Such an approach demonstrates the standardising, formalising and inherently bureaucratic characteristics certain uses of digital technologies can engender, and to which Frissen (1999) was referring, as noted earlier in this chapter. These standardising and formalising characteristics are reflected in the principles underpinning the Le@rning Federation SOCCI initiative, which are based on the provision of a distributed standards-based environment into which materials can be plugged and which will facilitate the distribution of materials and Intellectual Property from system to system and eventually, teacher to teacher (SOCCI 2000: 2).

This initiative then, has national, centralised control of the decision making of the project. The policy and funding mechanisms are controlled at a national level. There is the development of standards which are to be used for determining where the ‘materials’ can be ‘plugged’, and upon which the online content platform will operate. Therefore, Le@rning Federation SOCCI is a national initiative, using a centralised public sector model of management.

A dilemma that such an approach creates is the requirement to reconcile the various states’ and territories’ student outcomes statements and curriculum accountability frameworks with the online content being developed. It draws the comment that a national curriculum is being developed through the back door (cf DX 16 August 1999).

As it stands, this project is not establishing itself to devolve decision-making to the students, teachers or to the school level, about the sorts of knowledge to be valued, or about the curriculum or the teaching and
learning. Instead it assumes a particular curriculum structure into which education systems can plug resources. It is intended that this will be centrally determined. Teachers will be able to take what is available online and use it in their own circumstances but they are not the developers of the standards or of the knowledge to be valued and therefore placed online. This means teachers are not being accorded the authority of authorship of their teaching and learning materials. They are instead being constructed into implementers only, of existing materials. This represents a separation of teachers’ work from developing and teaching lessons to only teaching lessons, under the Le@rning Federation (SOCCI) model. This model is one which ultimately will de-power teachers and at the same time runs the risk of seeing the ‘pool of nationally accessible materials’, becoming stagnant.

If this project were to adopt a more decentralised model, then there would be funding within the project budget allocated directly to teachers in schools where they could construct their own online content. As Kenway (1998) states

> in order for teachers to teach their students to *use* technology, to teach *through* and *about* new technologies and to do so in the most competent and creative ways, they must be skilled, informed and critical users themselves (Kenway 1998: 83, emphasis in the original).

Planning of such an approach would occur at the outset of the project and be inbuilt into the production of the online content from the beginning. It would be a different model.

**Overview Of The States’ And Territories’ Digital Technologies Policies**

To provide an overview of the respective states’ and territories’ organisation for the provision of public school education including the advocacy of using digital technologies, the table in Appendix Ten indicates the state and territory Ministers of the Crown with responsibility for school education. Together with the commonwealth Minister of Education, these
politicians form the MCEETYA. Each state and territory Minister has responsibility for the government department with responsibility for school education, and each department is headed by a Chief Executive Officer or Director of Education. In 2001 the MCEETYA endorsed the establishment of the Australian Education Systems Officials Committee (AESOC), which combines CESCEO and the MCEETYA Standing Committee of Officials (Schools). It was also agreed at the same MCEETYA meeting that the work of MCEETYA would be structured into seven taskforces replacing the previous working groups of MCEETYA. The newly established taskforces are: schools resourcing, teacher quality and educational leadership, student learning and support services, information and communication technologies in schools, Indigenous and other targeted initiatives, transition from school, and performance measurement and reporting. Each taskforce is chaired by an AESOC member (MCEETYA 2001). The Le@rning Federation (SOCCI) project is located within the information and communication technologies in schools taskforce.

Each state and territory school education government department has an overarching departmental policy for the provision of schooling and a department-wide policy advocating the use of digital technologies in all schools. Several states and the Australian Capital Territory have established centres for specific development of digital technology initiatives within their jurisdictions. These arrangements are indicated in Appendices One and Ten.

Policy Initiatives Related To Public Schooling

Taylor et al (1997) have argued that public policies invariably interact or are connected with broader policy initiatives. This is the case concerning the policies advocating of the use of digital technologies in schooling, and this point was also raised in the research conversations. An outline of some of the policy initiatives related to the schooling sector digital technologies policies, therefore follows.
The federal ‘whole of government’ coordinating agency for digital technologies initiatives is DCITA. This Department houses the NOIE and the Office for Government Online (OGO). Details of the commonwealth political and bureaucratic structures established for managing the ‘whole of government’ and specific school education digital technologies initiatives are summarised in Appendices Seven, Eight and Eleven. DCITA also manages the distribution of funds for several national initiatives that are related, but outside the direct functions of the public schooling sectors. These initiatives include Networking the Nation and the Regional Telecommunications Infrastructure Fund (RTIF). The work of DCITA involves the distribution of funds generated through the part privatisation of Telstra from a fully owned government utility providing the nation with its telecommunications infrastructure requirements. Networking the Nation initially had $250 million of funding for distribution over five years from 1 July 1997 (Commonwealth DCITA 1999a: 1). The process used for the distribution of these funds has been through a competitive tendering process and decisions have been made by an ‘independent board’ chaired by the retired conservative federal politician from the National Party, the Right Honourable Doug Anthony (Commonwealth DCITA 1999b: 2). The intention of the funding has been to help ‘bridge the gaps in telecommunications services, access and costs between urban and non-urban Australia’ (Commonwealth of Australia NOIE 2000: 1).

One of the chief executives from a large national private sector company who participated in this research, was highly critical of what the federal government had funded through the RTIF. He said,

if you look at all the money that’s been approved … and you look at what new infrastructure has been built … you'll find it is less than 10 percent of the money that has gone into infrastructure, and yet you need infrastructure … without infrastructure you've got nothing (WX 12 July 1999: lines 181 –188).

He provided the following example to illustrate his concerns.
The biggest problem you've got, is … you know, almost fanatical rural groups, who want to, for example the …the Phillip Island thing, did you hear about that? They got $780,000 to put a connection between here [Melbourne] and Phillip Island. I mean, all they did was build a radio thing, and they’d promised everybody in the Korumburra shire, free telephone calls to Melbourne. So of course everyone was really happy about that! But they can't, because Telstra wouldn’t give them the link in there, so they've got this radio thing, that just about goes nowhere at the moment (WX 12 July 1999: lines 199-210).

He summarised his conclusions from the stories of his experiences of the uses to which he saw RTIF funding being put, as follows.

A piecemeal approach. Look, the only thing the government can do, is to make it easy for private companies, like in America. All the private companies have gone in, they own the infrastructure, they provide services, they link with each other and then they provide services to the customer. … But if they [the federal government] could put some baseline infrastructure down then that would be fantastic. But they haven’t been able to do that (WX 12 July 1999: lines 239-244 and 414-415).

An additional $214 million also from the part privatisation of Telstra has been made available to programs outside of Networking the Nation, to support improvements in regional communications (Commonwealth DCITA 1999b: 1).

While these related policy initiatives have been funded from the part privatisation of Telstra, it is telecommunications infrastructure that is required for the use of digital technologies if they are to form a central component of the provision of public schooling, available to all students throughout Australia. It was argued in Chapter Four that traditionally the provision of public schooling has included the intention that it is provided
in a manner that is of a universally similar standard to those within the respective system. Now, the responsibility for the provision of telecommunications infrastructure has in part been placed into the hands of the market through the use of competitive tendering. It is hard to see how these deregulated processes will provide the necessary standard of infrastructure required for an equitable, universal provision of public schooling available through the respective public schooling systems.

Relationships between commonwealth and state and territory structures
Commonwealth government departments, agencies and committees involved at a policy level in either ‘whole of government’ or specifically school education initiatives, have state and territory counterparts. These arrangements at the state or territory level are consistent with the national directions advocated by the federal government, and as outlined in Investing for Growth (1997), which stated that

the development of national perspectives on information economy issues will need to involve close consultation with the States. The Government will pursue ‘whole of nation’ approaches where appropriate through forums such as the Commonwealth-State Ministerial Online Council (Commonwealth of Australia 1997: 68).

Concurrently therefore, the commonwealth has centralised its administrative arrangements through the DCITA as a ‘whole of government’ office. At the same time, horizontal organisational arrangements across commonwealth departments have been put into place. Likewise, each state and territory government has established a central office or department that manages policy issues concerning digital technologies, across the ‘whole of government’. In some states and territories this operates out of (and therefore carries the authority of) the Department of Premier and Cabinet, or its equivalent. State and territory ministers from these departments form the Ministerial Online Council.

The Ministerial Online Council was established in 1997 and operates as the peak national ministerial forum across Australian governments. It provides direction for the national coordination of the ‘information economy’ policy
initiatives. Tables Eleven (in Appendix Ten) and Twelve (in Appendix Eleven) reflect the organisational arrangements that see commonwealth and state policies linked to each other. Appendix Eleven indicates the state and territory ministerial representative on the Online Council. They are the Ministers of the Crown with ‘whole of government’ responsibilities. This Appendix also indicates the government department or agency at a state or territory level with a ‘whole of government’ responsibility for digital technologies within each public sector; the respective state and territory specific ‘whole of government’ digital technologies policies; and the school education department level digital technologies policies. Each of the state and territory policies advocating the use of digital technologies in the schooling sector is intended to sit within the intentions of the commonwealth and state or territory ‘whole of government’ overarching policy and the specific ‘whole of government’ digital technologies policy. This demonstrates how school education department policies are authored to directly link with the ‘whole of government’ policies at the state and commonwealth levels. At the national level this expands the concept of ‘corporate federalism’ (Lingard 1993b), and a ‘new federalism’ to which Lingard et al (1995) referred, and was outlined in Chapter Four.

Recognising the organisation of the public sector and the policy context is ever-evolving in nature, Appendices Two, Eight and Eleven summarise the commonwealth and state departmental arrangements and policy developments between 1997 and 2001. As can be seen from these Appendices, there are several policies with which the respective state and territory schooling sector policies are to coalesce. Each of the above-mentioned Appendices demonstrates structures that are reflective of ‘corporate managerialist’ approaches (cf Taylor et al 1997), within their respective jurisdictions.

‘Whole of government’ initiatives and state responsibilities for schooling

While state and territory digital technologies schooling sector policies are linked into federal and state or territory ‘whole of government’ policies, schooling remains a state or territory based legislative responsibility.
Therefore, government departments with a ‘whole of government’ focus for digital technologies have jurisdiction at either the commonwealth or at the state or territory level, and education departments have ‘vertical’ jurisdiction at a state or territory level. The commonwealth exercises its authority through the use of ‘whole of government’ policies and through the release of funding for specific digital technologies initiatives. To adapt Lingard’s (1996) description based on work by Kickert (1991), this represents a specific example of the commonwealth steering the states and territories ‘at a distance’.

The commonwealth directions for advocating the use of digital technologies in schooling then, are linked with the state structures within which they are to occur. This was recognised in the conversation held with a senior commonwealth bureaucrat, as the following extract demonstrates.

Everything you’re dealing with is dealing with the fact that education is constitutionally a state and territory responsibility. It’s in the schools and the VET [vocational education and training] areas delivered largely at a state level and through state structures, and even in the schools where work is done in the independent areas, those independent areas have state structures. … So everything is related to that. And to that extent information technology in education is one of a number of issues where the commonwealth plays a role of trying to push particular, what it sees as key national directions, within that framework (EF 13 July 1999: lines 52-63).

The national schooling sector policy Learning in an online world: the school education action plan for the information economy (EdNA 2000a), outlines its view of the respective responsibilities of the commonwealth and the states as follows.

All governments share responsibility for funding school education and need to ensure that public funds are spent efficiently and effectively. … The Commonwealth has a particular role to play in
establishing the legal and regulatory framework for the information economy, for telecommunications policy and, in collaboration with school education authorities, for pre-service teacher education. The States and Territories, supported by the Commonwealth, have responsibility for school infrastructure, teacher professional development and the development of curriculum (EdNA 2000a: 3).

This statement provides an indication of moves towards considering the use of digital technologies in schooling from a national rather than a state by state perspective. This could be argued to represent a re-emergence of the ‘new federalism’ that Lingard et al (1995) observed in relation to the development of the National Statements and Profiles. There are sensitivities however, concerning the legislative responsibilities of the states and territories and their relationship with the commonwealth. This is reflected in the policy Learning in an online world (EdNA 2000a), which states that it is a national vision, ‘which complements, but does not compete with, the outlook of state systems’ (EdNA 2000a: 2). The Corporate Plan of the DEET 2000-03 (Victoria) however notes that ‘the relationship between the State and Commonwealth responsibilities is complex and delicately balanced’ (State of Victoria 2001a: 14). Therefore, while the policy arrangements provide a veneer of smooth efficiency, the contestable nature of commonwealth-state relations referred to in the previous chapter, remains not far below the surface.

While Learning in an online world (EdNA 2000a) identifies state, territory and commonwealth responsibilities, these arrangements in relation to the use of digital technologies are evolving and are not immutable. This policy indicates that nationally there has been an agreement made about the demarcation lines of responsibility between the states and the commonwealth but the organisation of the public sector can change for example with a change of government, or with a change of emphasis from an existing government, depending on how the current arrangements are viewed. The extract above however, demonstrates some of the complexities emerging for public policy as a result of advocating the
ubiquitous use of digital technologies in schooling. Not only are there the traditional commonwealth and state structures for public schooling to consider, but also consideration is required of issues such as the legal and regulatory framework of the information economy and telecommunications policies, within increasingly deregulated markets (cf EdNA 2000a). These are important issues when considering what public schooling means in Australia in the 21st century, given that the present public schooling sector policies are urging the ubiquitous use of digital technologies.

**What Is Missing?**

It was argued in Chapter Four that the history of the provision of distance education to school aged students in Australia has involved using technology-mediated learning. Those people now working in the provision of distance education at state or territory levels however, tend to be left outside the formalised structures for developing digital technologies policies and implementing related commonwealth funded initiatives. The administrative separation between distance education and the rest of the schooling system was indicated by one of the chief executive officers participating in this research. He stated that


As a result, within the respective states and territories, and nationally, the paths required to influence the legitimate and authoritative policy voices and authors of policies, vary in degree of clarity and accessibility to those working in distance education. Recognising this, the state and territory school level distance education agencies have banded together into a national network called the National Materials Development Network (NMDN) (cf NMDN 2001). This Network consists of the principals and directors of each state and territory who manage the development and production of distance education materials, developed for use by students.
from Kindergarten to year 12, and including adult re-entry students. New Zealand School of Correspondence joined NMDN in 2001. Through this network the representatives have been able to exchange information about digital technologies activities in which they have an interest.

The increasing use of digital technologies for distance education delivery means that each state, the Northern Territory and New Zealand are undertaking the development of student materials in a digital format for use by the distance education schools. This however, has tended to occur separately to other state, territory and national digital technologies initiatives. A chief executive participating in this research acknowledged this observing that

> the concerns of the two [distance education and ‘face to face’ schooling] have converged now around the digital materials and digital technologies but their bureaucratic structures haven't converged (GH 15 July 1999: lines 49-51).

Late in 2001, NMDN was advised that it would not be included within any of the AESOC taskforces and was therefore excluded from these decision-making processes. The potential benefits that could be gained from the experiences of these distance education specialists then, are not formally sought.

From the perspective of those working in distance education, being excluded from the decision-making processes concerning the use of digital technologies in schooling can result in initiatives being undertaken that have little application in distance education teaching and learning settings. The following extract from a memo initiated by NMDN for consideration by AESOC, reflects their views of what occurs as a result of a lack of involvement in the authorised State mechanisms for policy development and implementation of funded digital technologies initiatives.

> The recently released Civics and Citizenship materials are clearly accessible for face-to-face mainstream schools but as a resource are virtually unusable in a distance education environment. Information
was sought from the Network at the completion of the project concerning their distribution to distance education schools. … There is quite a wide demand for distance education materials for use in mainstream schools, including product in print, video, audio, multimedia (CD-ROM) and web based format. Such materials are easily adaptable by teachers within a mainstream situation. However, the reverse is not true. Many mainstream materials are not suitable in extant form for use in a distance education environment. As many students have restricted contact with teachers, materials need in most cases to be explicitly scaffolded so they stand alone and students can navigate and use them intuitively (Dabinett 2001: 1).

While this memo could be interpreted to be an indication of ‘turf defence’ as described by the chief executive officer GH earlier, it can also be interpreted to be in accord with the views of this chief executive officer that were also outlined above. There is an acceptance that there is a convergence occurring which is seeing the development of digital materials for use in both ‘face to face’ and distance education teaching and learning settings. The potential convergence in the administration and management for producing digital materials however has not yet transpired into ways of operating that are considered to be of mutual benefit to officers working in both distance education and ‘face to face’ schooling. In fact, in some cases, there seems to be a deliberate exclusion of distance education specialists from the relevant decision-making taskforces occurring.

**Developing Traditions In The 21st Century**

It has been argued throughout this section then, that the policy approaches being advocated and undertaken within the schooling sector, flow from the vertical/horizontal or centralised/decentralised ‘whole of government’ policies originating both from the federal government and from state and territory initiatives (cf Commonwealth of Australia 1997; Moyle 1999). These are reiterated within school education departmental policies, at the state, territory, national and federal levels. There is not an historical
precedent however, specifically about government departmental jurisdiction in relation to ‘whole of government’ approaches to the issues concerning the advocated use of digital technologies in the public sector, at either the national or state levels. Nor are there precedents in relation to the roles and relationships between commonwealth agencies and state and territory government departments in this digital environment. This means that the power structures and areas of authority are actively being identified and constructed, debated and contested. We are setting down that specific history now, which it will be possible to reflect upon in the future. One of the political operatives participating in this research observed this stating that part of [investing in the widespread use of digital technologies in schools] is a banking on the future. The cumulative affects of what’s being done now, will be built on, and there will be spin-offs that are yet to be seen, and yet to be conceived even. And that maybe, if in thirty years time or so we’re seeing this as the embryonic stages, it’ll only be what we do at this stage that’ll allow those other stages to be built on (DX 16 August 1999: lines 716-722).

This observation indicates that we are located in the early days of the widespread or the proposed ubiquitous use of digital technologies in schools. Several other participants in this research also commented upon this as the following extracts indicate. One of the chief executive officers stated, ‘I think we’re just seeing it get started. It's just being born. I think that we are in the very early days’ (KL 26 July 2000: lines 583-584). Similarly, a senior state level bureaucrat commented that ‘we’re still only at the very cusp of all this stuff, I mean I think, everyone thinks we’re full on into this. We are just at the very cusp of it’ (MN 20 July 1999: lines 416-418). Another chief executive officer stated that ‘I think we are still at the stage of asking the questions rather than having the answers’ (OP 16 August 1999: lines 579-580). Without specifically having a digital past, it is necessary to look for precedents or traditions that are central to the purposes of public schooling. Revisiting our basic principles about what it
is we believe is important to maintain as part of the ethos and culture of public schooling then, can provide insights for the tasks at hand now.

To acknowledge that there is a lack of specific past digital experiences upon which to draw however, is not to negate or ignore the existing history and traditions of public schooling in Australia, or to suggest that the use of digital technologies in schooling represents a field separate from other activities that constitute the public schooling sector. Instead, it heightens their importance. The implications of the policies advocating the ubiquitous use of digital technologies in schooling requires reconfirmation of the fundamental values and beliefs upon which ‘free, compulsory, and secular’ education has been founded. That is, the tradition must remain as a living tradition. As one chief executive commented in a research conversation: ‘the question is “what's the guarantee?” I mean the reason you fund schools is that they kind of guarantee an education to kids’ (GH 15 July 1999: lines 743-745). This again raises the question, ‘what do we mean by public schooling in the 21st century?’ Given the earlier explanations about the necessity of a telecommunications infrastructure for the provision of public schooling, where the use digital technologies is included as a core policy requirement, a secondary question becomes, ‘how will the delivery of public schooling in the 21st century be ensured?’

**Budgets**

Bridgman and Davis (2000), Pusey (1992) and Reid (2000) each have indicated it is through policies as instruments of governance and the associated budgetary frameworks, that indicate the course in which public resources are being directed and therefore reveals what is considered important and valuable by governments. Understanding the funding allocated to digital technologies initiatives, reflects assumptions about the purposes of schooling, and how the use of these technologies contribute to those purposes. Mark Considine (1994) argues that ‘budgets are two things rolled into one. They are the annual appropriation needed to run public programs and they are the government’s major opportunity to signal its
plans for the coming year’ (Considine 1994: 93). The following interpretations and understandings then, have been gleaned from the budget papers reviewed as part of this study. This has led to the development of the tables provided in Appendices Three, Four and Five which summarise the amounts of funding identified within the states and territories to support the policies nominated in Appendix One. These figures exclude the Year 2000 compliance funding.

Where The Money Goes
It has been difficult to ascertain the exact expenditure by government schooling systems on digital technologies initiatives but the Appendices Three, Four and Five in summary, indicate the following. During the four year financial period of 1998-99 and 2001-02 in excess of $600 million has been allocated by the states and territories for their respective policy initiatives. Commonwealth government contributions to digital technologies policy initiatives are not included in these figures. As such, the funding identified in this thesis is consistent with a report prepared for the cabinet of the federal government in 2000, that indicated that for 1998-1999, (excluding the Year 2000 compliance strategies), the states, territories and the commonwealth together were committing over $200 million per year (Trinitas 2000) to initiatives advocated in the digital technologies policies for public schools. Alternatively, the Secretary of the Tasmanian Department of Education Dr Martyn Forrest has estimated the costs of the widespread use of digital technologies to an education system stating that ‘already in about the last four or five years the issue of ICT [information and communication technologies] has added somewhere close to five percent to the cost of running an education system’ (Forrest 2001: lines 81-82).

The majority of the funding nominated in the budget papers has been allocated to the provision of computer hardware, software, local and wide area networks and the provision of telecommunications facilities. This represents a considerable financial investment in digital technologies equipment. One senior state bureaucrat read the situation this way.
It is what I might call the sexy thing. Through the '90s as ministers of education have become aware that this is an important issue, they can understand you know, the computers, the shiny boxes, is the apparent thing. So that's where a lot of the investment has been (QR 1 December 1999: lines 250-254).

The majority of the computers purchased across all state and territories use Microsoft® Windows operating systems. Every state and territory except the Northern Territory has signed a state or territory-wide licence with the Microsoft® Corporation for the purchase of software licences (cf. Department of Education (Tasmania) 2001b; Department of Treasury and Finance (Victoria) 2000; DETE (South Australia) 1999d; EdNA 2000b; Parliament of the Australian Capital Territory 1997; Parliament of New South Wales 2000). In the final section of this chapter, this narrative about the provision of Microsoft® licences to schooling systems is discussed in more detail. In doing so it highlights the marketisation of public schooling, and provides a bridge to the views for the future proposed in Chapter Six.

Since the computer equipment and software purchased by schooling systems is almost exclusively provided by the private sector, this also means that most of this public funding has been directed to the private sector. Public funding is also provided directly to the private sector for the outsourcing of educational online content development costs. These include the salaries and other related costs for graphics and instructional designers, programmers, and editors. An example of this is the work undertaken by the private sector in Tasmania to develop the online resources for the Tasmanian Department of Education’s Discover website, using commonwealth funding from the OPEN-IT program (Department of Education (Tasmania) 1999). This funding, colloquially referred to as ‘Harradine money’, was gained by the independent Tasmanian senator through a political deal struck by him with the federal government over the part privatisation of Telstra (cf. BX 21 July 1999; QR 1 December 1999).
Online content has been identified by some state and national agencies as one of the priorities requiring urgent action (EdNA 2000a), with claims that there does not exist a suitable depth of Australian educational online content (cf Trinitas 2000). These agencies argue that online content must be developed as a matter of urgency: ‘the scarcity of curriculum content has now become the most significant barrier to gaining the benefits from ICT [information and communications technologies] in schools’ (Trinitas 2000: 12). It is ironic though, that while the state and territory schooling systems are outlaying public funds for the purchase of hundreds of thousands of computers, at the same time the extent of Australian online content available for use by students and teachers is scarce. Distance education materials developers however, are producing online content for use by these students.

Computer to student ratios
One of the ways the states and territories demonstrate to the public their commitment to implementing their respective digital technologies policies is through proclaiming the computer to student ratios that have been achieved. Ministers of Education like to do this in Parliament and in media releases (cf Government of South Australia 2001a; Northern Territory Treasury 2001; Wreidt 2000). The following extract from the Queensland Treasurer’s 2000-01 Budget Speech to Parliament is indicative. He stated that

we promised Queenslanders that we would achieve a ratio of one computer to 7.5 students by 2001. I am pleased to advise that target already has been met and we are setting new goals. We aim to achieve one computer for every five students, with this target to be achieved in secondary schools in 2001-02 and for Years 3 to 7 by 2003-04 (Queensland Government 2000).

Table Two (below) summarises the computer to student ratios claimed by each state and territory to be achieved between 2000 and 2002. This table allows the reader to view the number of enrolments in government schools for each state and territory (cf ABS 2001a). Placed alongside of this are the computer to student ratios each state and territory claims it has achieved, or
in Western Australia’s and Queensland’s cases, aim to achieve by 2002. This table also includes a projection of the number of computers required by each state and territory per annum, to achieve their stated computer to student ratios.

**Table Two: Student enrolments, computer to student ratios and number of computers required by states and territories**

<table>
<thead>
<tr>
<th>State</th>
<th>Full time student enrolments R-12</th>
<th>Computer to student ratio</th>
<th>Projected number of computers required per annum*</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>38 401 (ABS 2001a)</td>
<td>1: 4.7 (ACT DECS 2000b)</td>
<td>8170</td>
</tr>
<tr>
<td>NSW</td>
<td>759 623 (ABS 2001a)</td>
<td>1: 8 (NSW Treasury 2001a)</td>
<td>94,952</td>
</tr>
<tr>
<td>NT</td>
<td>28 925 (ABS 2001a)</td>
<td>1: 10 (NT Treasury 2001)</td>
<td>2,892</td>
</tr>
<tr>
<td>QLD</td>
<td>430 402 (ABS 2001a)</td>
<td>1: 7.5 reducing to 1:5 (Queensland Government 2000)</td>
<td>57,386</td>
</tr>
<tr>
<td>SA</td>
<td>174 117 (ABS 2001a)</td>
<td>1: 5 (Government of SA 2001a)</td>
<td>34,835</td>
</tr>
<tr>
<td>TAS</td>
<td>62 803 (ABS 2001a)</td>
<td>1: 5 (DofE (TAS) 2001c)</td>
<td>12,560</td>
</tr>
<tr>
<td>VIC</td>
<td>528 189 (ABS 2001a)</td>
<td>1: 5 (Department of Treasury and Finance (VIC) 2001)</td>
<td>105,637</td>
</tr>
</tbody>
</table>
| WA      | Primary: 144 087
Secondary: 81 680 (ABS 2001a) | Primary: 1: 10
Secondary: 16 336 |

**Notes**
* Each state and territory provides consolidated Kindergarten to year 12 figures except for WA where the information they provide is disaggregated into ‘primary’ and ‘secondary’ students.
# Projected numbers of computers was calculated by dividing the number of students, with the computer to student ratio

As can be seen, the Australian Capital Territory claims the lowest student to computer ratio, asserting that one computer is provided to every four to five students. One of the political operatives participating in this research viewed such behaviour this way.
All of government activity has traditionally been evaluated in terms of inputs, rather than outcomes. And it’s an easy input measure to look at what you’re providing in terms of hardware, software, or just in terms of dollars under a particular label. But I do note that some states are heavily funding computers into schools, other states have varied that theme a little by funding computers to teachers, as well as into schools (DX 16 August 1999: lines 305-312).

The total number of computers required nationally for student use then, is over 450,000 computers per annum, without including computers for teachers or for school administration.

While the computer to student ratios are a way for the states and territories to demonstrate students’ universal access to the use of digital technologies in their schooling, in the budget documentation reviewed no state or territory Treasurer acknowledged that purchasing and maintaining this infrastructure, (which is required for the use of digital technologies in schooling), is costly. The Report by the Ministerial Working Party in Victoria (2000a) however, acknowledged that the provision of digital technologies is expensive (State of Victoria 2000a). There was no public documentation reviewed in this study either, that demonstrated that state and territory Treasury officers or Ministers of the Crown recognised that given their policies, digital technologies initiatives would require recurrent rather than discretionary funding, yet the policies of the public schooling sectors are advocating their use as central requirements in the provision of public schooling in the 21st century.

Skills testing and accreditation

Within the budgeted initiatives in the Australian Capital Territory, South Australia and New South Wales, is the proposed conduct of state-mandated assessments of students’ computer skills. In the Australian Capital Territory and South Australia it is proposed that skill testing will occur using industry identified competencies: ‘information technology education for students, aged 6-16 years, [will result] in industry verified standards’ (DETE (South Australia) 1999e 2). The Australian Capital Territory’s Plan
for IT in Learning and Teaching has three key goals and the third goal states that ‘assessing and reporting IT [information technology] outcomes for Year 10 students’ (Australian Capital Territory Government 1998: 1), will be undertaken. The Northern Territory is undertaking planning to introduce student assessment of their computer skills (Northern Territory Department of Education 2001a). Tasmania, Western Australia and Queensland have identified competencies for teachers to be able to demonstrate (cf Curriculum Corporation 2000a; EdNA 2000b; Education Queensland 1999b).

While skills testing is used by the states and territories as a mechanism to demonstrate universality of access to the digital technologies and of achievements in using them, these assessments currently tend to ascertain the most basic skills levels required to use digital technologies. The tests include competencies such as being able to turn a computer on and off and recognising the icons on a desktop (cf Australian Capital Territory DECS 2001a; DETE (South Australia) 2001a). The use of these tests is reminiscent of the testing used to ascertain students’ literacy levels.

Teacher professional development
The commonwealth, state and territory digital technologies policies recognise that funded professional development of teachers is important if value is to be extracted from the other investments in digital technologies in schools. Some states and territories put more of an emphasis on teacher professional development than others. Nonetheless, all the states and territories, and the commonwealth recognise the importance of teacher professional development in both their policy and budget statements. Based on the figures identified in this study, between five and ten per cent of the funds allocated for the introduction and use of digital technologies in schools at a state or territory level have been allocated to professional development of teachers. This is at variance with the ‘Trinitas Report’ prepared for the federal cabinet which estimates that fifteen per cent of government funding is allocated to teacher professional development (Trinitas 2000: 8). Compared however, to the amount of funding allocated
for infrastructure costs, this is comparatively little to be spent on teacher professional development.

Professional development funding has tended to be directed to specially identified schools and to individual teachers within them. These designated schools and classrooms, are variously called ‘lighthouse schools’ (Northern Territory and Tasmania), ‘technology focus schools’ (Western Australia), ‘navigator schools’ (State of Victoria) and ‘technology enhanced classrooms’ (Northern Territory). In South Australia, discovery network teachers work in ‘discovery schools’ and ‘global discovery schools’. At a state or territory level this model has the potential to generate a schism between schools that receive grants with a small amount of funding provided centrally for professional development and those schools provided with larger amounts of funding. There is a lack of research however, about whether these models of professional development are building a critical mass of teachers with skills in using digital technologies, espoused by the policies.

In the research conversations conducted, there was the assertion that there is a lack of a critical mass of teachers undertaking professional development beyond the initial technical skill development required to use a computer. Participants who raised the issue of teacher professional development considered that its design should be such that it supports teachers to consider ways of using digital technologies in their teaching and learning, rather than to simply focus on the technical skills of how to use the computer. The following comments illustrate the point.

I think the majority, I would hate to give a percentage, but I would say a very high majority of the professional development is you know, how to use a word processor, how to use a spread sheet, how to use PowerPoint, and it’s in fact very basic IT [information technology] skill level stuff. And, I mean that is very important but there hasn’t been a lot of taking it to the next level. You know, now how do you use a word processor to facilitate online collaboration
for students. You know that’s the next step, the next stage in that whole professional development process but I don’t think we’ve had enough of, or we haven’t got the critical mass in the staff population who are at that stage, and therefore you know, there is a lot of teachers who do their worksheets at home on a word processor and that sort of thing but how much does that really add to the quality of the learning experience for the students? If you were to say you know there are no worksheets, there is a you know a guided course on the intranet and here’s a whole range of resources both human, physical, remote, books, you know, CD-ROMs that you need to source and access to actually complete that thing, then I think it would be quite a different learning experience. And if some, as I said, some people are doing that but I think a majority of the focus is very much on that first stage in the IT skill development (ST 22 August 1999: lines 126-144).

Learning in an online world (EdNA 2000a) states that a report from the United States (US), Professional development: a link to better learning (1999), shows that schools there spend about five per cent of available funds on professional development for using digital technologies in their classrooms. This US report goes onto suggest that ‘major change will not occur until this proportion increases to 30%’ (in EdNA 2000a: 6). In the financial year 2000-01, a conservative estimate of the aggregated total of funding the states and territories had allocated to digital technologies initiatives, was about $250 million for the financial year. If 30% of this had been allocated to teacher professional development during 2000-01, nationally this would have represented about $83 million for the 2000-01 financial years. This did not occur.

Maintenance and technical support
As schools implement the policies advocating the widespread use of digital technologies, there arise maintenance and technical support issues. These are requirements that are central to ensure that students and teachers have access to the communications infrastructure within and beyond the school.
Many schools in the government sector have tended to allocate teachers to the role of coordinating the technology infrastructure of a school, including its technical maintenance (cf ST 1999), but this is beginning to change. The dilemmas of how to maintain the technical requirements associated with the use of digital technologies in schools, were identified in some of the research conversations. Some of those with whom research conversations were held indicated that changes are occurring in the way schools are deploying staff, and so the skills profile of schools is changing (cf AZ 1999; QR 1999). The following extracts are illustrative.

A parent commented on her observations that teachers and people in leadership positions in schools had put the infrastructure into one of her local schools.

The technology in that school has been implemented by the teachers working out of hours for nothing, and the head and the deputy coming in and wiring the rooms up and things like that at the weekends. So we can’t talk about Australia moving into that era, with well qualified teachers and well taught students, if we’re not actually going to get in there and really give them serious funding, to support all of that stuff (CC 18 August 1999: lines 82-86).

A primary school principal recognised the necessity of having appropriate technical support although within his school he had no specific funding for what he required. He said that ‘you really need a network administrator to cope with a complex system’ (EW 27 October 1999: lines 551-552). In distance education the requirements for technical support have been more urgent as a result of their early adoption and use of online technologies. One distance education principal reported on the changes to the schools for which she was responsible.

What it’s meant is the infrastructure support and the help desk support has had to be increased markedly. We’ve been able to do
that by using trainees and what is clear is that the infrastructure stuff, and there are some things that happen that you don’t even, the invisible stuff, but the people in terms of the staffing, we’ve actually had three technicians in the school on this site and one at [a regional site] (AZ 26 July 1999: lines 525-532).

These experiences from school-based personnel all demonstrate that there are funding as well as personnel issues associated with being able to provide students with access to the use of digital technologies as part of their schooling. This is partly due to the necessity for the access to these technologies to be reliable in order for them to be able to be used in schools.

A senior state level bureaucrat indicated that he saw the required changes necessary to schools’ staff profiles as urgent.

I think, if you look at what’s actually happening, the technologies becoming, there's more of it, it's becoming more complex, and to date it's been looked after by teachers, which is a real waste, because you know, teachers are expert educationalists. But they are not necessarily good technical support people. And even if they are, that's not what they’re paid to do. And the more they’re doing technical support, obviously the less teaching that they are doing, so we've got to move away from that (QR: 1 December 1999: lines 301-307).

An observation of one of the senior officers working with a large multinational company also reflects these concerns.

If we have a look at the biggest issue in schools and in the IT industry, it’s not so much the money issue, although that’s an issue at the time, and expertise. What we’ve seen across Australia is the person in the school, who’s job it is to manage the network is a teacher. They’re an educator. And they’re usually in that leadership role because they are a good educator. Not because they’re good at managing a network, or have any understanding about how IT
[information technology] works, or how it needs to fit in the bigger picture of the school. And so, in the government school sector, they employ teachers to be network managers (ST 22 August 1999: lines 361-369).

Another dilemma that arises from using teachers as technical maintenance staff was reported by one senior state bureaucrat who has observed that we’ve got too many schools where in fact the computing coordinators are driving it from the cables and the plugs and how much RAM they’ve got in the school. Not about actually what they’re doing with it (MN 20 July 1999: lines 755-758).

The organisation of providing technical support in schools, the nature of the provision of the equipment, and the links that these issues have with the influences such arrangements exercise over the nature of the curriculum, are therefore issues for the local leadership and management of schools, and for central offices. While delivery models to support the maintenance and technical requirements of schools have been identified as strategic issues at the school level, to date this has seen state or territory level strategic policy responses in Tasmania (cf Tasmania Online 2000) and in Queensland (cf Queensland Government 2001a), only.

The necessity for maintenance and support is provided in Tasmania through their Managed Schools Project (cf Tasmania Online 2000). It was established as a systemic method of providing technical support to isolated schools. Following Tasmania’s lead, Queensland announced the ‘Networked Learning Communities’ program, which is intended to provide schools with computer technicians and technical support (cf Queensland Government 2001a). These initiatives are indicative of the changing nature of the provision of public schooling in the 21\textsuperscript{st} century, as the use of digital technologies increases. While there is arguably an under-funding of teacher professional development, this is also the case concerning the provision of professional development for the people required to undertake the technical maintenance of the infrastructure at either the school or the
central level. This issue is taken up again in Chapter Six. Models of providing technical support to students and schools then, is an issue requiring considerably more thought by the states and territories.

**In Summary**

It has been demonstrated in this section that every state and territory and the commonwealth have funded public schooling policies advocating the ubiquitous use of digital technologies, and that these are portrayed as core requirements. Ministers and senior bureaucrats with ministerial authority have authored these policies and associated budgets. To achieve the objectives of these policies it has been estimated that over $200 million per annum has been allocated by the states, territories and the commonwealth. These funds have bought computer hardware, software, content development and professional development for teachers and technical staff. The importance of an infrastructure, and in particular a telecommunications infrastructure, it has been argued, is a necessity if the use of digital technologies as a core policy requirement in the provision of public schooling, is to be fulfilled. Concerns have been raised in this first section about the efficacy of deregulating the provision of the telecommunications infrastructure, given the increasing dependence the provision of public schooling is likely to have on such structures. Further, it has been argued that to achieve the stated policy objectives requires the allocation of recurrent funding. This will be required if the espoused obligations to students are to be met, and an uneven diffusion of the technologies is to be avoided.

This first section has outlined the directions in the policies advocating the ubiquitous use of digital technologies in schooling. It provides a foundation of information upon which the arguments in the following sections are based. It is time then, to now consider in more detail and with less naivety, the language used in the policies and budget texts.
SECTION TWO
THE LANGUAGE OF POLICIES AND BUDGETS

The following section takes a circle back to the policies and budget texts reviewed, to consider the language being used. It was demonstrated in the previous section that across Australia there are several policies advocating the use of digital technologies in schooling, at the ‘whole of government’ level and in the schooling sector specifically, at both the state and federal levels. This section moves on from there, seeking to interpret, understand and explain the underpinning philosophies of the language used in these policies. Another arc will be undertaken in Section Three of this chapter to explore two narratives that have surfaced from this study.

It was asserted in Chapter Two that according to Ricoeur (1988b) it is through the process of argumentation that some interpretations are maintained and others are discarded. He posits that the process of interpretation involves a movement between interpretation, understanding and explanation (Jones 2001). In this section some terms and phrases regularly used in the policies are discussed and debated. It is argued that in order to be able to undertake this study, it is necessary to develop an understanding of the language being used. This is so because unlocking the meanings inherent in the language employed provides opportunities for interpreting, understanding and explaining the stories being told. As such, debating some of the key terms and phrases is required. The language used and the definitions provided however, should not be considered as immutable. The language and the definitions are not pre-ordained or set, but are emerging and developing, making them open to contestation. In such an environment, debate is important in order to understand the hegemonic forces that may be operating and for clarity of thinking to prevail.

Positioning Digital Technologies

The use of digital technologies requires a level of technical knowledge, socially applied (Kress 1997), in order for them to meet their purposes. Different people require different levels of technical knowledge depending
upon what sorts of technology they are using and for what purposes they want to use it. A definition of ‘technology’ used by Hakken (1999) indicates technologies can be defined as ‘networks of interacting human, organizational, and artifactual entities and practices. Particular elements both constitute and are constituted by the networks in which they participate’ (Hakken 1999: 23). Hakken’s (1999) definition of technology problematises it, and places ‘technology’ into social and cultural constructs; a view that is preferred in this thesis. Adopting Hakken’s definition is cognisant of Heidegger’s (1977) warning, that instrumental definitions of technology can hide the overall technological relationships that exist with the world. Studying the language used to describe the purposes and functions of the equipment however, may facilitate an understanding of the potential different technologies can have in structuring activities undertaken in school education. The relationships between digital technologies and people are presented here, to highlight how each of the following views hinges upon how humans exercise their power and control over the development and use of technologies.

Authors such as Bigum (1997), Bromley (1998), Wyatt et al (2000) and Henwood et al (2000) have identified paradigms of how digital technologies in society are viewed. Each author identifies these views as being flawed. Two of these views are addressed here, as they are useful to understand when interpreting the language used in the policy documents reviewed. The first is referred to as ‘technological determinism’ (Smith and Marx 1998), and the second, viewing ‘technologies as neutral tools’ (Bigum 1997; Bromley 1998; Wyatt et al 2000). An overview of these two frameworks and an exploration of these two views in relation to the policies intended for the Australian schooling sector, follows.

Technological Determinism
The language of ‘technological determinism’ suggests that technologies emerge almost from ‘thin air’ and transform society as they are diffused (Bromley 1998; Henwood et al 2000; Margetts 1999; Smith and Marx
This view suggests that technology is developing according to its own laws and timeframes, apparently without the use of the power and control that humans can exercise. Margetts (1999) suggests that during the 1990’s, Frissen adopted a ‘technologically determinist’ position. At the end of that decade he confirmed his technologically deterministic views stating that ‘strategic development rooted in the characteristics of the technology … has autonomous consequences for social reality. … Technical systems determine social systems’ (Frissen 1999: 43). Alvin Toffler (1970, 1980, 1990) is also described as technologically deterministic by Margetts (1999). Chant and Moore (1989) however, suggest that the term ‘technological determinism’ tends to be used by commentators rather than authors, and determining who is and who is not to be labelled as a ‘technological determinist’ can be controversial. Taking this risk however, it is asserted here that the language of technological determinism is evident in several of the policies reviewed. The following South Australian ‘whole of government’ policy statement illustrates this: ‘modern technology has its own momentum, constantly building on itself, expanding, finding new territories to explore and develop’ (State Government of South Australia 2000: 1).

Bromley (1998) suggests that the language that characterises technological determinism promises widespread improvements in the quality of citizens’ lives. That is, such a stance accepts that technological progress equates to social progress. A statement from the Office of Information Technology in New South Wales illustrates this by stating that the government values information and communication technologies as a means for improving its government, shaping its economy and connecting its citizens. It understands how these technologies can maintain a high standard of living for the state’s communities and businesses, influence its future and transform its connections with the world. It places great emphasis on the rapidly emerging online society and its ability to change forever how we learn, conduct business and
interact individually, nationally and globally (New South Wales Government 2000: 1).

The promised improvements in the quality of people’s lives extends to the processes and outcomes from education, and improved access to the informational resources of the society. In a similarly technologically deterministic way, the claim is made in South Australia that investment in digital technologies in school education is made ‘based on the premise that use of these technologies will not only improve administrative procedures but will, most importantly, lead to enhanced student learning’ (DETE (South Australia) 1999c: 20). Here the technologies in themselves are portrayed to ‘lead’ to ‘enhanced student learning’, apparently without human influence.

Utopian quests

It is argued that since technological determinism is equated with social progress (Bromley 1998) that this is also linked to what is labelled here as ‘utopian quests’. Partly this can be explained as being due to the characteristics of public policies (as outlined in Chapter Two), where it was indicated that policies by their nature reflect the ambitions and intentions of governments. In many of the policies advocating the use of digital technologies in schools however, there is a utopian undercurrent about the potential ‘miracles’ of using digital technologies to solve a range of social issues. It is implied that these technologies will bring about an improved future.

Wertheim (1999) explains such views stating that More’s Utopia was a version ‘of idealized Christian communities notable for their use of technology’ (Wertheim 1999: 42). She applies More’s concept of Utopia to current circumstances concerning the use of digital technologies by stating that

today too, champions of cyberspace suggest that their technology will create a new utopia – a better, brighter, more “heavenly” world for all. With contemporary cyber-utopianism, … the technology is
digital rather than mechanical, but the dream remains the same (Wertheim 1999: 42).

The introduction of the word ‘cyberspace’ here, justifies a brief pause to consider to what it refers.

‘Space’ in a digital environment often is described as ‘cyberspace’. The term ‘cyberspace’ itself implies a place; one where human interaction occurs (Strate Jacobson and Gibson 1996). The term was first used by William Gibson in his science fiction novel Neuromancer.

Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts … A graphic representation of data extracted from the banks of every computer in the human system. Unthinkable complexity (Gibson 1984: 51).

Cyberspace has now entered into common speech (Strate, Jacobson and Gibson 1996) and is often used as a shorthand way to describe networks of computers that can be used to create a metaphorical space (Nunes 1997). Similarly, Ravetz (1998) defines ‘cyberspace’ as ‘the potential of the Internet to provide an open communication not hindered by speed, by distance, by number of participants in the exchange, nor potentially by limitations of sensory data’ (Ravetz 1998: 116). This is the utopianism of cyberspace.

The following extract called Defeating the Tyranny of Distance, from a report by the commonwealth Information Policy Advisory Committee (IPAC) illustrates the desire for the fulfilment of the utopian promises that can be associated with the rhetoric advocating the use of digital technologies. In the Forward and Chapter One of this report it states that

Australians have progressively abandoned their open spaces and magical landscapes simply because most of us have no choice. There are not enough jobs, there are too few prospects for a full lifestyle, there are not enough opportunities for learning and there is no access to the levels of community service that we regard as
acceptable in today’s world. Professionals, investors, and families confront the tyrannies of distance, isolation, high costs, second rate services and see no future (IPAC 1997: ii). … This need not be so. The communications revolution can change much of this. The members of the Information Policy Advisory Council (IPAC) believe that we can deploy the wonders of the Internet and the technological platforms of this ‘information age’ to transform the possibilities for rural Australia (IPAC 1997: ii). … The members of IPAC have a vision of an Australia where everyone is ‘location independent’ in terms of access to affordable services, closeness to each other and to the worlds of learning (IPAC 1997: ii). … It is about deploying the true miracles of the communications and information revolution to transform rural Australia, to break down the barriers between metropolitan and country Australia and this to create new futures for all Australians. (IPAC 1997: 3). … If Australia can produce ‘location independent’ communities linked to the world through advanced communications, then it will be possible to attract new businesses and new investment in rural areas (IPAC 1997: 12).

Here digital technologies are ascribed with the ability to promote a space where communities can be fostered and where there will be an enriching of people’s lives as social beings. These excerpts construct idealised communities that transcend the tyrannies of distance. To achieve this rhetoric however, a terrestrial infrastructure is required. To achieve this utopian state of ‘location independence’, there is the necessity not only for a sound telecommunications infrastructure, but also for some, an accessible electricity supply.

There are also utopian quests proposed in the schooling sector policy documents suggesting that the miracles of cyberspace mean ‘we are witnessing a new world order’ (Queensland Government, Department of Communication and Information, Local Government and Planning 2000: 2). In Queensland it is claimed that ‘the “cyber” education of tomorrow
will have no geographical borders. … Cultural exchange may well develop into the long-dreamed-of “global village” (Queensland Government, Department of Communication and Information, Local Government and Planning 2000: 2). While these views were recognised by one of the chief executives participating in this research, he instead suggested that sometimes there’s more ambitious talk about that than will ever occur in reality. The kinds of views which say, “well kids could talk to scientists,” for instance. When are scientists going to do science, with three million Australian kids emailing them? And so I think there’s a bit of a kind of fairyland ambition behind some of this stuff (GH 15 July 1999: lines: 243-248).

The utopian fantasies that presently are seen in policy texts therefore require reading with some groundedness in the day to day realities of school life. As we proceed through this chapter however, other utopian plots will become evident from the extracts from government documents included here.

Limitations Of Technological Determinism
One of the limits of technological determinism is that while technological progress is considered as social progress, it fails to recognise that technological use and technological change can be viewed as a social rather than a scientific phenomenon. Drawing on his previous work to argue against technological determinism (Williams, Robin and Edge 1996), Robin Williams states ‘technology is a social product, patterned by its creation and use’ (Williams, Robin 1999: 41). Therefore, understanding that humans have control over the creation and use of technology is central to a critique of technological determinism.

Locating the concept of ‘technological determinism’ in relation to policy-making, Robin Williams (1999) makes the observation that policy-makers and the public have often taken the course of technological progress for granted – as if technology developed according to some predetermine
assumed that the content and direction of technological innovation were not amenable to social analysis and explanation (Williams, Robin 1999: 41).

Adhering (deliberately or not) to a technologically deterministic position means that instead of thinking about the use of digital technologies being dependent upon what we want to do given the context, nature and purpose of the technologies, it instead becomes possible to abdicate responsibility for the outcomes of introducing and using digital technologies (in this case), into the public schooling sector.

Linked into the philosophy of technological determinism are two other assumptions: firstly that of the speed of change, and the lack of control over the influences of change; and secondly the nature of the changes which tend to be described as ‘revolutionary’. A brief examination of these two related concepts follows.

Change and speed of change
Dominant in policy texts both in Australia and overseas, is the use of language that indicates that we are living in a period of profound change due to the far reaching effects the digital technologies are exercising on our lives (Bradley 1999; Bigum and Kenway 1998; Moore 1998; Negroponte 1995; Wise 2000). In the policies and budget texts reviewed in this study the speed of change is presented as inevitable, and ‘rapid’. Therefore the texts conspicuously present a view that various technologies have the power to be an agent of change. Technology is considered as the independent driver of these changes. There is little consideration by the policy authors about what is causing these views, whether the speed of change can be controlled or why it is perceived to be so fast. It seems to be assumed that the speed of change cannot be controlled and therefore, schools must be responsive to that speed of change: ‘teachers will need to respond to the new work and technological conditions of schools’ (The State of Queensland 2000: 10).
The following extracts from some of the policy texts illustrate the views expressed in the policies and budget texts concerning the speed of technological changes.

Young people are growing up in a world characterised by rapid technological change and global communication (Forrest 2000: 1).

Schools need to be dynamic and flexible to the rapid changes in information and communications technology (State Government of Victoria 2001b: 1).

While challenging, [it] is recognised as a fluid and rapidly changing period in human history, full of potential and opportunity. While the pace of change presents obvious challenges it also promises to deliver curriculum that is rich in content (Australian Capital Territory DECS 2001a: 1).

To say we live in a rapidly changing world is something of an understatement (State Government of South Australia 2000: 1).

There is a commonality of language being used that is describing the ‘rapid’ speed of technological changes impacting on schooling, and that schools must respond to those changes. The commonality of language use will be discussed further shortly, but to remain with the notion of the rapid speed of changes for a little longer, this use of language tends to be used to describe the speed of technological change as if it is outside of human control. Such language asserts that humans and their social structures must respond to these rapid changes.

To see one of the reasons the speed of change is considered rapid, it is instructive to take a close look at the following statement from South Australia which states that ‘rapid technological developments in technology products and services will have an impact on the DECS\textit{tech} 2001 Project infrastructure’ (DETE (South Australia) 1999f: 3). This
implies that the speed of the changes to which the policies and budget texts refer, is the speed of changes in the market for digital technologies goods and services, and it is to this market that schools are required to respond. Marginson (1997) asserts that markets in schooling construct powerful relationships based on dominance, submissiveness and control. He states that markets are
determined by the political and the discursive, including economic knowledge joined to power … [where] economies are never innocent of power. They are constituted by systems of domination-subordination and control, and help to contribute such systems in return (Marginson 1997: 15).

At the same time as the technological changes are promoted as being rapid however, human change is lamented as being too slow.

Slowness of human change
The speed of change has been picked up by some commentators who talk in ‘Internet years – units of time much shorter than calendar years but which nonetheless contain enough changes to fill a year in most other industries’ (Thomas and Wyatt 2000: 23). The South Australian ‘whole of government’ policy Information Economy 2002, uses the notion of ‘Internet years’ to suggest that change is too slow. It states that ‘the pace of public policy development and administrative change tends to be at the opposite spectrum to the “Internet years” by which the “New Economy” companies measure time’ (State Government of South Australia 2000: 16). Therefore, at the same time as the speed of change is being described almost universally in policy documents as ‘rapid’, some have taken the view that change is too slow. Here the slowness to change is referring to the human responses to the technological changes. Learning in an online world (EdNA 2000a) indicates this in relation to the reported commitment and skill level of teachers and principals necessary to implement the changes required to achieve the ubiquitous use of digital technologies in schools. It states that ‘progress is taking place, but not at the pace or depth required to effect major change’ (EdNA 2000a: 5). The human speed of change identified here then, is considered not fast enough.
One of the political operatives linked the age of the teaching force to the speed of change wanted of teachers, as the following extract indicates.

This sounds like a really nasty thing to say, to attack older people, but it is the greatest concern, the changing, the way it’s changing so fast, is of the greatest concern to the older teachers, you know, the ones on the cusp of retirement, who perhaps don’t see it as such an urgency to get up to date, because they can see in 3, 4, 5 years that they’re not going to be in the teaching system any longer, and I think it does create a little bit of fear with them, and you know, all we can do is encourage them to take up the IT [information technology] (BX 21 July 1999: lines 427 – 434).

A chief executive suggested a strategy to deal with this issue however.

I'd be taking all of the teachers who are, you know, 50, and saying for the rest of your teaching career we want you to do something completely different. And we want it to be risky, and exciting, and dangerous and we guarantee you'll have a job for 10 years if you want to. But you are going to be given an opportunity to transform the education system and you don't have to live with the consequences. And I reckon that group of teachers, potentially, ironically could be the real lever for change. You know, principals and senior people and entrenched heads of departments. If you said to them, here are some resources, here’s what we want you to achieve, just go away and do it; transform the system. I feel that’s a kind of unexplored resource (GH 15 July 1999: lines 422 –433).

In the body of literature that already exists about the nature of school and teacher change, (cf Hargreaves, Lieberman, Fullan and Hopkins 1998; Fullan and Hargreaves 1991; Hargreaves and Fullan 1998), it has been acknowledged that human change takes time. Like all other narratives, stories of school change have a past, present and future. Hargreaves (1998) makes the point that educational change does not just have implications for teachers’ knowledge, skills and problem-solving abilities but that it affects
a whole network of important and meaningful relationships that constitute the work of schools. Hargreaves (1998) draws from his previous work (Hargreaves 1990) to indicate that it is difficult for those working outside of classrooms to appreciate how time feels within classrooms. Allen and Glickman (1998) argue that successful school change is mainly difficult and slow because it is not only about changing the organisation or the structure of schooling but that meaningful change requires the hearts and minds of those who work in schools, and that requires the building of trust. Building trust takes time.

Furthermore, the speed of change is a comparative notion, and here human change is being judged against the speed of technological change. In addition, changing personal beliefs, values or patterns of behaviour involves patterns of power (cf Foucault 1980). Since human’s speed and ability to change is expected to respond to the perceived speed of technological change, (which it has been argued is responding to changes in the digital technologies market), sees such expectations being labelled by some, as technological determinism.

Slowness of technical change and the speed of telecommunications
Contrary to the claims in the policies and budget texts that the speed of technological change is rapid, one of the state level senior bureaucrats participating in this research indicated that both the speed of change to achieve the technical infrastructure required by the schooling system in his state was too slow, and that the pressure to keep up with other countries could be used by bureaucrats to negotiate with telecommunications carriers. He began by describing the bandwidth available in his state and compared that to countries overseas.

I’m talking about 64 K.[kilobits per second], 128 K. services. In North America they’re talking about 2Mg [megabites], 5 Mg services. Now if you just take ‘international competitiveness’ perspective on this, we’re going to be left behind. And so one argument that we’re putting up is, “we must keep up with these other countries” (QR: 1 December 1999: lines 186-190).
Here, speed of change seems to mean that the technological changes are occurring rapidly overseas, but not in some states of Australia. It is argued however, that schools are linked into the economy, and so ‘international competitiveness’ becomes a legitimate argument to put forward to justify infrastructure funding. This extract also alludes to the pressure to ‘keep up’ with the telecommunications speeds that states and countries are able to achieve. This pressure to keep up seems to influence the expressions of the policy concerns about the speed of changes required.

Another perspective to the concept of ‘speed’ is that of telecommunication connections. These vary across the Australian schooling systems with those states most recently updating their arrangements having the faster connections. The schooling systems in Western Australia and the Northern Territory (cf Carpenter 2001; Lugg 2001; Northern Territory Department (LATIS) 2001b), through the use of satellite technology plan to have the fastest connections of all of the states and territories, with 400 metropolitan schools in Western Australian being supplied with 10mbps of bandwidth each (Carpenter 2001). The slowest speed identified by a state is 64 kilobits per second (kbps). According to Commonwealth DEST (previously DETYA), ‘64kbps connections are proving inadequate, especially in larger schools’ (Commonwealth DETYA 2000a: 16). That is, the connections are too slow for meaningful educational use. Further Commonwealth DEST has stated that ‘a major issue facing the schools sector is the absence of adequate telecommunications infrastructure and the high cost of Internet connectivity’ (Commonwealth DETYA 2000a: 8). Moore (1998) has argued however, that ‘an efficient telecommunications network is the single most important element in a successful information society’ (Moore 1998: 150). As such, the provision of public schooling in the 21st century, where the use of digital technologies is presented as a core policy requirement, means that telecommunications infrastructure is also required to be a central component within that provision.
All the students and parents participating in this research indicated that the speed of access to the Internet was important to them for educational purposes. For those located outside the metropolitan area, the speed of the telecommunications services for accessing and downloading materials from the Internet was considered too slow for effective use as a tool for learning. The following extract from a transcript is indicative of their sentiments.

I go on the Internet, send emails and receive some. I hardly do it every day. I normally do it about once a week. Sometimes I look up sites but like everybody else, it is too slow, and normally don’t get anything that’s good (Student 1 20 March 2000: lines 3-5).

For many individuals and school communities then, the speed of technological change while promoted as ‘rapid’, is not seeing the installation of the required infrastructure occurring fast enough for their realities to meet the policies’ ambitions.

Compression of time and space and slowness of change

In distance education digital technologies are used to overcome some of the problems created by distance for schooling. Speed of undertaking distance education using digital technologies is grounded on assumptions that time and space are compressed (cf Green, A. 1997). Policy texts assert that this will act as an equalising factor for those located outside urban areas (cf Commonwealth of Australia NOIE 1998b). Such a view sees the potential for digital technologies to liberate people ‘from the constraints imposed by their bodies or by geography’ (Henwood et al 2000: 3), as the following statement from the education department in Queensland indicates. ‘Education Queensland recognises that there is a challenge it must face as we move into an era where knowledge supersedes information and technology transforms longstanding relationships of time and space’ (Curriculum Corporation 2000a: 75).

This line of argument claims that digital technologies are driving a restructuring of previous views about time and space (Loader 1998; Barr...
2000) and, some argue, of society more generally (Green, A. 1997; Moore 1998). As Andy Green (1997) states, digital technologies are ‘transforming culture and politics. Time and space are compressed and a new culture emerges’ (Green, A. 1997: 1). These views tend to underpin assertions which advocate that ‘the potential of technology for reducing rural and remote students’ isolation and lack of access to information is enormous’ (HREOC 2000a: 39). It is important to remember however, that here it is the potential rather than the reality that is being recognised.

Ironically one of the impediments to the rapid diffusion across Australia of the use of digital technologies is that of telecommunications charges, which historically have been based upon distance from the exchange. That is, the further away from the exchange, the more expensive the telecommunications costs (cf Commonwealth House of Representatives Standing Committee in Primary Industries and Regional Services, Infrastructure and Regional Development 2000). The costs for installation and distance based charging for telephone calls required for use by the Internet, along with the lack of robustness, reliability and maintenance of telephone lines, has made telecommunications expensive to the country consumer. This has been an impediment to the compression of time and space, as the following statement indicates.

As well as poor quality telecommunications infrastructure in regional areas, people also pay a premium access to high bandwidth services. Exorbitant distance based prices for high B/W [bandwidth] telecommunications services severely impede the development of Info Tech (sic) related businesses and services (South East Economic Development Board 2000: 2).

Therefore, those living in zones where telecommunication charging is based on distance, the changes required to implement the promises of government policies, and to see the proposed equalising effects generated through the compression of time and space, are not reporting ‘rapid’ changes.
Those living in regional, rural and remote Australia are observing the rhetoric of the speed of change, and the claims of economic and social benefits that are said to be occurring as a result of digital technologies. These changes are being promoted as strategies whereby schooling systems can ensure a similar standard of public schooling provision across the system. Those for whom it is claimed the proposed changes will benefit the most however, are asking instead, not to be left behind.

Communications (or the absence of) is a big issue for ICPA [Isolated Children’s Parents’ Association]. Education is moving quickly to the expectation that Information Technology (IT) is available to all teachers and their students as a tool and the Internet is the library of the 21st Century. We must demand to have access in the bush or the modern education delivery mode will not work for us (Beach 2000: 73).

The ICPA, as representatives of parents of isolated children recognise the importance of telecommunications as a pre-requisite for entering the ‘information age’ via the Internet. This is illustrated by a number of the motions that were carried at the ICPA 29th Annual Conference (2000). The following two motions are illustrative.

Motion 31: That Federal Council ICPA lobby the Federal Government for specific funding to ensure that compulsory age Distance Education students are not left behind in the rapid development and change of curriculum, in particular in the technology area; … and

Motion 34: That ICPA (Aust) urges the Minister for Communication and the Arts to ensure that all rural and remote students studying by Distance Education have access to Internet services at local call rates (ICPA 2000: 12).

Therefore, while technologically deterministic language is being used in the policy texts to describe the ‘rapid’ technological changes applicable to schools and systems, it has been demonstrated that in several ways this
does not reflect the experiences of different groups within the respective school communities.

Revolution
Also associated with the language of technological determinism are assertions that the changes brought about by using digital technologies are revolutionary. Tapscott (1998) talks about ‘a communication revolution’ (Tapscott 1998: 2) which is ‘shaping a generation and its world’ (Tapscott 1998: 2). The Ministers of Education and CESCEO were advised in December 2000, that preparing young people to participate in the ‘digital world and information economy … [is] essential to the nation becoming competitive and buoyant in a world rapidly changing through the influence of the information revolution’ (Curriculum Corporation 2000b: 7). Policy descriptions of the speed of the changes include references to the nature of the changes being revolutionary as the following extracts illustrate.

Globalisation and technological advances, particularly the revolution in information technology, have dramatically changed the way in which we do business (Government of South Australia 1999a: i).

The age of the technological revolution is characterised by global change of an unparalleled rate (State Government of South Australia 2000: 1).

How to use ICT [information and communication technologies] is only part of the picture. It is now time to revolutionalise how students learn. The Budget provides the first instalment towards this revolution (New South Wales Treasury 2001b: 5).

In the late nineteenth century, manufacturing emerged alongside of primary industry as a generator of wealth and a focus of communities. The impact was so sweeping that it was called the industrial revolution. Today’s information revolution is another
shift of potentially greater magnitude. It is every bit as sweeping, but considerably faster (Tasmania Online 2000: 1).

The South Australian policy Information Economy 2002, explains that ‘globalisation of production and markets through industry and market restructuring’ (State Government of South Australia 2000: 11), are generating these revolutionary changes. If we accept this explanation, then it is possible to understand that the proposed changes to schooling are also (at least) in part due to globalisation. In a technologically determinist framework these changes can be considered as inevitable because they are devoid of human control, are rapid and are out of control. They are thus ‘revolutionary’.

The use of the word ‘revolution’ in the phrase the ‘industrial revolution’ draws from the context of the French Revolution, and in that sense, new institutions, new social systems and new methods of governance were at stake (Williams, Raymond 1976). Referring to the changes as ‘revolutionary’ here though, does not help those teachers already feeling insecure or fearful about the technological changes proposed, to launch wholeheartedly into those changes. Students in this study however, did not see digital technologies as ‘revolutionary’ but as a part of their normal or commonsense view of the world.

Some policy documents forewarn of what will happen if the utopian promises of the ‘information economy’ are not adopted. Participating in this revolution will empower communities to shape their destinies in ways never before imagined. Either we embrace this challenge and prepare for the future, or we lag behind the rest of the world. Our economy will suffer and our communities will not reap the social benefits if we fail to harness communication and information technologies to access global networks of knowledge, information, entertainment, goods and services (Queensland Government Department of Communication and Information, Local Government and Planning 2000: 2).
This statement reflects utopian goals and revolutionary changes, both of which can have extreme interpretations. These statements and others that are similar, make it sound as if it is a patriotic duty to accept the inevitability of taking part in the ‘information economy’. These statements are playing on individuals’ sense of patriotism and nationalism, even statism. Further, to question the revolution is to be a traitor. To ask a rhetorical question: who would want to be accused of undermining a national or state effort of improving our futures by questioning the ‘revolution’? Wise (2000) however, is more cynical about the ability of digital technologies to solve economic problems. He states that

the ideology of the information age is a convenient myth for politicians since it explains current economic troubles (falling real incomes, job insecurity and unemployment) as the inevitable result of technological change while at the same time promising a better future without the need to change the existing economic arrangements (Wise 2000: 199).

Instead, the ‘information age’ reinforces and in some cases, intensifies the existing economic arrangements.

The term ‘revolution’ too, has the capacity to develop binary distinctions: ‘you are with us or you are against us’; you are part of the revolution or you are a part of the status quo. Implying such binary distinctions within school education policy documents is unlikely to be helpful to the creation of a positive and shared understanding of where the future of schooling can be.

On the other hand, Gramsci (1971) used the phrase ‘passive revolution’ to refer to what he saw as the most usual form of hegemony where the purpose was to achieve neutralisation of any other social forces to those changes desired by the ruling classes (Mouffe 1979). Gramsci’s category of ‘passive revolution’ however was not limited to only this sense of usage. He saw it as being useful to describe the transition from one mode of production to another, and therefore to act as a political theory of transition
(Mouffe 1979). In Gramsci’s (1971) intention of the phrase, there is a non-determinist relation between crisis and revolution that avoids an interpretation based on historical development, and instead sees a movement from one mode of production to another achieved through political purposes and dominance that is accepted passively by those involved. The change may be significant but it is accepted without resistance.

Depending on the policy and the context within which the term ‘revolution’ is used then, there can be many interpretations of its meanings. ‘Revolution’ however, is an emotive and value charged word. It has the capacity to instil a sense of fear as teachers are asked to fatalistically participate in the revolution; a revolution not recognised by school students.

Information Age ⇒ Knowledge Age ⇒ Power ⇒ Democracy

Related to the concept of revolution is the concept of transformation. One claim of transformation arising from the use of digital technologies, is that there will be access to more information. This will lead individuals to more knowledge, which in turn will lead them to more power and therefore democracy will be achieved. These linkages seem to draw from Francis Bacon’s (1627/1960) view that knowledge is power and people’s lives will be improved through rationality and technology, and this will lead us naturally to democracy in the 21st century, where our lives will be transformed.

Another interpretation is that links are created between the access to information, characterised as the ‘information age’, and to information being combined with wisdom leading to the ‘knowledge age’ (Dellit 2000). This claim is based upon an economic paradigm where value is located in information: ‘a country’s store of information is … its greatest source of wealth’ (Stonier 1983: 12). The concept that information has an economic
value gives rise to the labels of the ‘information age’ and the ‘information economy’.

Economic growth is seen to occur through the application of information and knowledge to tasks. ‘The knowledge-based economy will rely on technology, innovation and capabilities to create wealth and raise the standard of living’ (Northern Territory Government 2000: 20). Similarly, the Organisation for Economic Cooperation and Development (OECD) states that

* economies are increasingly based on knowledge and information.
* Knowledge is now recognised as the driver of productivity and economic growth, leading to a new focus on the role of information, technology and learning in economic performance.

The term “knowledge-based economy” stems from this fuller recognition of the place of knowledge and technology in modern OECD economies (OECD 1996: 3, emphasis in the original).

Lamberton (2000) however, has reported Joseph Stiglitz who in 1999 (when Senior Vice-President and Chief Economist of the World Bank) stated ‘standard economic theory has little to say about the efficiency of the knowledge based economy’ (in Lamberton 2000: 6). Further, Lamberton (2000) has asked ‘how is it that the world over, enormous sums have been invested in computerization and yet we have not managed to detect measurable impact on labour productivity?’ (Lamberton 2000: 2).

Wise (2000) argues that by highlighting ‘the value of information to national economies and society in general, the information theory of value has been effective in persuading governments to institute policies for the benefit of the computer and media industries in particular’ (Wise 2000: 189). In Australia, this has been achieved in the schooling sector through the sales of computers, software and services to public schooling systems. This is a point that is returned to later in the chapter.

Marginson (1997) makes links between information, knowledge and the economy by noting that ‘the post-industrial literature argues that a new
social structure is emerging in which industrial production is replaced by knowledge relations’ (Marginson 1997: 15). Drawing on Mandel (1978), Raymond Williams (1983b) and Jameson (1984), Marginson goes on to argue that markets in education are better understood as an extension of capitalist production, consumption and exchange to new spheres rather than an altogether new economy. Value production continues to be triggered by human labour, and property remains subject to individualised ownership. The spread of knowledge as intellectual property indicates that old forms of economic organisation and control have adapted to new markets and new kinds of commodity (Marginson 1997: 15).

Marginson’s views on this point are consistent with Lamberton’s (2000). This is hardly a revolution.

Schools are central to the conceptual flow which suggests that information leads to knowledge, which leads to power, and this leads to democracy. Sometimes the terms ‘information age’ and ‘knowledge age’ are used interchangeably, or as a subset of one another: ‘information technology is the construct of the knowledge economy’ (The State of Queensland 2000: 6). Schools are implicated in this paradigm, as ‘school education provides the foundation for the knowledge society and for the development of citizens who are creative, confident and enterprising’ (MCEETYA 2000a: 2). This is illustrated by the following example.

Tasmanians will have a world-class education, training and information system which matches the best anywhere. We will achieve this through: An information-rich community with access to global and local resources so that everyone has the opportunity to participate in, and contribute to, a healthy democracy and a prosperous society (Department of Education (Tasmania) 2001d: 1).

Learning in an online world (EdNA 2000a) suggests that the promised transformations are necessary, moving schools from ‘industrial age
paradigms and values to those more appropriate to leading the creation of wealth and growth of a knowledge society in Australia’ (EdNA 2000a: 10). A similar view is published by the Tasmanian Department of Education in its departmental policy Learning Together (2001a).

We have started to move out of the industrial age and into the information age. The information age holds the promise of a world vastly different from our current one. It has been likened to a starburst (Department of Education (Tasmania 2001a: 1).

Overseas commentators make similar observations about the impact of digital technologies on schools and more broadly on society (cf Holmes 1997; Tapscott 1996; Stewart 1998).

Technological determinist language then, talks about the speed of the revolutionary changes that are to transform schooling and society more generally, and are presented as already happening, true and largely as unproblematic. The use of this language sees the author able to abdicate the power and control that humans can exercise over these digital technologies. It is important to remember however, that the processes occurring at school are based on interactions of many kinds, not simply on the digital provision of information. It is a mistake to believe that access to information alone will lead an individual to be able to exercise increased power over his or her lot in life, or that democracy will be achieved simply through the provision of information.

As a codetta, given the limited extent of the funds provided for professional development of teachers (outlined earlier in the chapter), and the definition of revolution which suggests it is fundamental change across a mass of people, the revolutions and proclaimed transformations promised in the policy texts are still coming. Portraying the changes as already with us, means that those people who have not been a part of the changes described are already structured out of the rhetoric.
Technology is neutral (it’s just a tool)

The second paradigm mentioned earlier, concerning how digital technologies can be viewed, considers them as neutral, and like technological determinism, sees them emerging as if from ‘thin air’. In this view however, the assumption is that people can choose how they want to use the technology now that it is here (Wyatt et al 2000). The following statements illustrate how technology can be viewed as a tool.

If educators fail to understand the capabilities that children can develop with powerful new learning tools, there will be disenchantment with schooling among young people (State of Victoria 2000a: 34).

The Internet is a tool for teachers, for use as a resource and as a means for engaging in professional dialogue. It is also a tool for students (DETE (South Australia) 1999g: 4).

Computer-based technologies can expand the repertoire of methods by which students can learn and teachers can teach. The tools can be applied in all areas of learning from kindergarten to year twelve (Department of Education, Tasmania 2001d: 3).

Reports by consultants to government also provide advice using similar language.

Multimedia will become a normal business tool, not only for global trade but also for government service delivery and for enhanced education and training outcomes through online teaching and other forms of flexible delivery (Moon and Cook 1998: i).

Bromley (1998) suggests that an overemphasis on technology being located within a social context leads to the view that technology is a neutral tool. He asserts that viewing technologies simply as tools is seductive since it implies that its use means it is neutral of any predispositions. Conceiving of digital technologies as neutral however, also leads to thinking of them as objective, since digital technologies
reduce selected activities to objects (Sini 1993). Bromley (1998) states though, that like most tools digital technologies have ‘a built in propensity to be used in certain ways toward certain ends’ (Bromley 1998: 4). He indicates that they ‘originated in the social context that was in effect when the technology was designed; [and] they reflect the goals and assumptions of the people who created the technology’ (Bromley 1998: 4). He goes on to argue that it is important to recognise that the development and use of digital technologies are social constructions that are the outcome from human action, not ‘some immutable fact of nature’ (Bromley 1998: 4). That is, people author the construction and use of digital technologies. Such recognition however, was not obvious in the policies and budget texts reviewed.

By viewing digital technologies as neutral, (as with the use of the technologically determinist language), the power and control over the development and use of the digital technologies sees the responsibility removed from human hands. Viewing ‘technology as a neutral tool’ is consistent with concerns raised by PMSEIC (2000) where they stated that ‘while Australia has been a good user of information and communications technology (ICT) it has not captured the major benefits of being a producer of ICT goods and services’ (PMSEIC 2000: 2). Using digital technologies without producing them is to take a ‘hands off’ approach. Viewing technology as neutral, or taking a technologically determinist view of the use of digital technologies in schools, means governments and public school education systems are constructing themselves into passive or subordinate, rather than active roles in relation to the use of technology. Strategies to counter such views in the future in public schooling are debated in Chapter Six.

Digital technologies as an identity
The language of technological determinism and the terms used when describing ‘technology as neutral’, allocates ‘technology’ an identity. The character of ‘technology’ has its own control over its priorities and directions. It is as if it has a free will there to be ‘harnessed’.
In the Foreword to the policy *Learning in an online world* (EdNA 2000a), Dr Martyn Forrest states that ‘harnessing these technologies for learning is vital. Australia’s future … depends on it’ (Forrest 2000: 1). The South Australian Minister for Education makes a similar statement when he refers to ‘students’ ability to harness technology – a vital requisite for full participation as active citizens of the future’ (Buckby 1999: 3). The Ministerial Working Party Report to the Victoria Government, stated that ‘there is an urgent need to acknowledge children’s ability to harness new and emerging technologies for learning’ (State of Victoria 2000a: 34).

These statements make it sound like the technologies are ‘free ranging’, much like horses or chickens, and that harnessing them will bring these otherwise unruly technologies into use for schooling, thus making the harnessing of technologies a role of schooling. This is ironic since we would not allocate such an identity to a hammer or a car or a carrot, except in fantasy, perhaps like in Bananas in Pyjamas.

Digital technologies as symbols
As well as considering digital technologies as having an identity, they can also be considered as symbolic. That is, digital technologies can be considered as representational of things outside themselves (Berger, A. 1997). Early in his development of theory, Ricoeur (1974) stated that ‘starting from symbols, … they constitute the revealing substrate of speech, which lives among men. In short, the symbol gives rise to thought’ (Ricoeur 1974: 299). Ricoeur (1974) argues that symbols stimulate unconscious thoughts about meaning. Wacquant (1992) argues that symbols and symbolic systems can be considered not only to mirror social relations but can also help to constitute them.

Drawing on Bourdieu, digital technologies can be seen as symbolic capital (Bourdieu 1977). As indicated in Chapter One, Bourdieu defines ‘capital’ as the power that individuals have within fields that provides them with access to the ‘specific profits that are at stake within the field’ (Bourdieu
Bourdieu describes symbolic capital as the form that economic, cultural or social capital take when its specific logic and worth is recognised (Bourdieu and Wacquant 1992). In this way digital technologies act as positional goods which can ‘help define the status of educational institutions’ (Kenway et al 1994: 322). This therefore is one reason digital technologies are seen as worthy of institutional and individual expenditure.

Bromley (1998) argues that computers can be considered as a symbol but indicates that their meanings are indeterminate since representational meanings depend on the symbolism allocated by different people. Bromley (1998) suggests that while the computer can be a shared symbol of a variety of groups with an interest in school education, this does not mean that they each have a shared vision for the future. The power of the symbol of the computer according to Bromley (1998) is the ‘unstated yet powerful set of assumptions [made] about the nature of the technology’ (Bromley 1998: 2). In this study, one interpretation of the symbolic use made of digital technologies is to demonstrate the quality of education school students receive. This in part explains why Ministers of Education and Treasurers have seen it as important to announce in Parliament the progress their governments are making on reducing computer to student ratios. Digital technologies are seen as symbolically important to be able to demonstrate that the State is providing a ‘modern’, high quality education. Further, this quality of schooling is seen to provide a competitive edge locally, over other schools, and more broadly, with other Australian states and territories, and internationally.

Extracts from the transcripts of the research conversations and the policy texts that follow, demonstrate how competition and technologies are linked.

Competitive edge
A principal indicated how he saw that computers could be used as a way of gaining a competitive edge over other schools in his vicinity, by attracting
enrolments: ‘we would probably use it as a selling point when they [parents] come to the school. You know, “we’re networked, and we've got a lab”’ (EW 27 October 1999: lines 741-744). A senior state bureaucrat indicated that when he had been a principal of a metropolitan school, a faculty within the school had trialled using digital technologies to link their students with others in a remote school. He indicated that one of the purposes for undertaking the trial was to gain a competitive edge over other schools: ‘I guess beneath that [the trial], we were positioning ourselves to be able to take a lead’ (GG 19 July 1999: lines 553-554).

One of the political operatives indicated her surprise at the lack of ‘symbolic capital’ that some of the large private schools in Sydney had demonstrated during a visit there with a family member who was potentially going to enrol her children at one of the schools. ‘The interesting thing was, considering that you know, we’re talking $10,000 a year fees for some of these schools, the level of IT in those schools was very disappointing’ (BX 21 July 1999: lines 481-483). This comment was followed by an observation indicating that often the status of government schools is considered as inferior or not as competitive as private schools concerning the provision of digital technologies to students: ‘there is a perception that perhaps the non-government schools are ahead of what the government schools are doing’ (BX 21 July 1999: lines 488-489). In this way digital technologies are used as representative of the quality of schooling that is being provided.

The investment made in Queensland’s 463,000 school students will be crucial to both our quality of life and the international competitiveness of Queensland in the “knowledge economy”’ (Queensland Department of Treasury and Finance: 1999: 1).

At the ‘whole of government’ level each state and territory claims it will be competitive or internationally competitive in the global economy by teaching students to use digital technologies at school. In Victoria ‘the Government intends to position Victoria as the information and
communication technology and knowledge capital of Australia’ (Government of Victoria 2000: 82). South Australia will be ‘one of the most connected communities in the world’ (State Government of South Australia 2000). The Australian Capital Territory Government’s objective is ‘to ensure Canberra is a leader in Information Technology (IT) in Australia for both the public and private sectors by 2001’ (Australian Capital Territory Government 1999b: 4). All the states and territories are using digital technologies as a sign that they are economically competitive. This however, is reflective of the influences of the hegemony of competitive markets on the provision of public schooling.

It has been argued in this section then, that the language of ‘technological determinism’ and ‘technology as a neutral tool’ is evident in the policy texts. Such language suggests that technologies emerge almost from ‘thin air’ and rapidly transform society as they are diffused. Accepting such a view means that managing digital technologies is difficult as they are not within the easy control of people, and therefore of organisations. This was reflected in the conversations with one of the chief executive officers. He said

I think you have to recognise that this is a phenomenon that you can't control. It's happening quite independently. And it's something which is changing. I think changing the nature of communication, changing the nature of interaction, in ways which we are only sort of, vaguely becoming aware of (OP 16 August 1999: lines 740-745).

Technological determinism and viewing technology as a neutral tool then, are in the language of the policies and budget texts, and in the language of some of those authoring the policies.

Another characteristic of the language of the policies and budget texts is the use of common terms and phrases. These have been labelled here as ‘recurring motifs’. In the next part of this section, these motifs in the policies and budget texts are considered in more detail.
Recurring Motifs

Underpinning the policy narratives to be discussed in section three of this chapter, are recurring phrases that occur throughout the policies and budget texts. Metaphorically, these can be considered as operating in a similar way to motifs in musical compositions. In music a motif is a self-contained melodic or rhythmic unit that in compositions is repeated at different pitches and sometimes at different intervals but irrespective of their location remain recognisable (Scholes 1970).

The use of recurring motifs in the school education policies and in the whole of government policies demonstrates that there is a commonality of policy language. This is evident in the commonwealth, national, states and territories policies and budget texts, albeit that the cultures of the states and territories traditionally have tended towards the maintenance of their respective and perceived uniqueness and independence, as was outlined in Chapter Four. Nonetheless this appears to be consistent with a global trend: ‘across the world, the goals of these information policies are surprisingly consistent’ (Moore 1998: 149). In the Australian policies, there are similarities in the names of the programs, the nature of the programs, the proposed outcomes, and the structures used to implement the digital technologies policies initiatives being advocated. It is posited here, that the ‘recurring motifs’ are evidence of the political and ideological purposes of the policies and budget texts. These commonly used words and phrases operate then, like a recurring motif. The following six examples are illustrative.

Clever Capitals And Smart States: Creating And Delivering The Future

Each state and territory proclaims its future will be intelligent, smart, innovative or something of a similar ilk. The Australian Capital Territory for example has a whole of government plan called Creating the future (Australian Capital Territory Government 1997) that advocates that Canberra will be the ‘Clever Capital’ (Australian Capital Territory Government 2001). A media release by the (then) Australian Capital
Territory Chief Minister states that ‘the Education Department was looking to enhance [its] reputation as the “clever capital” by continuing to invest in our children’ (Carnell 2000a: 2). South Australia’s whole of government digital technologies policy is called Information Economy 2002: Delivering the Future (State Government of South Australia 2000). Queensland promotes itself as the ‘Smart State’ (Queensland Government 1999a, 1999b). Each state and territory and the commonwealth proclaim the desirability of moving the provision of government services into an online environment (cf Queensland Government, Department of Communication and Information, Local Government and Planning 2000; New South Wales Government 1998). In the Australian Capital Territory for example, in the 2000-01 Budget, $18 million was allocated ‘for a series of initiatives that will put most government transactions and information online within the next two years’ (Carnell 2000a: 1). In other words, digital technologies policies are one of the mechanisms used by governments to promise a better and brighter future where innovation will be rife and jobs will be created.

Innovation

‘Innovation’ is a strong recurring motif in the ‘whole of government’ and schooling sector digital technologies polices and budget texts. The commonwealth government has a Prime Minister’s Engineering, Science and Innovation Council (PMSEIC 2000). Victoria has established an ‘Innovation Commission’ (State of Victoria, DEET 2001c), and Tasmania has a ‘Learning Together Council’ (Department of Education, Tasmania 2001e) whose responsibility it is to be innovative. In Queensland the ‘Smart State is a place where innovation is encouraged and valued’ (Lucas 2001: 3).

The concept of ‘innovation’ in the Australian schooling sector policy texts however, is used in various ways, but without the meaning being obvious. The South Australian education department’s Strategic Plan July 2000-June 2003 states that the ‘use of innovative information technology’
(DETE (South Australia) 2000b: 10) will be ‘maximised’ in the central office. It also states that ‘innovation and professional development for teachers in information technology’ (DETE (South Australia) 2000b: 10), will be fostered. The Victorian report Public Education: The next generation (2000a) has a chapter headed ‘Innovation and excellence’. The first issue dealt with in this chapter is the role of digital technologies in schools. It states that there is now the necessity to widen the scale and increase the pace of innovation, exploring the potential of ICT [information and communication technologies] to make possible new ways of thinking and of bringing creativity to bear on a range of increasingly complex problems (State of Victoria, DEET 2000a: 34).

In Queensland State Education 2010 the concepts of ‘quality’ and ‘innovation’ are linked together. It states that ‘quality is based on schools’ response to and relationship with parents and will be strengthened when they become leaders in innovation and the use of information technology’ (The State of Queensland Education 2000: 10).

Margetts (1999) notes that the spread of digital technologies throughout the public sector in the United States of America and in Britain has placed pressure on bureaucrats to ‘innovate’. She suggests that this is ‘fuelled by the enthusiasm of politicians for the benefits of the “information age”’ (Margetts 1999: 31). Such an approach also links the concept of ‘innovation’ with the concepts of effectiveness and efficiency.

The concept of ‘innovation’ is also closely linked into ‘human capital theory’. Suffice to indicate here, that the ideology of human capital theory that emerged during the 1970’s and 1980’s argued that the benefits of education for productivity emerge through education being able to enhance people’s abilities to be creative, flexible and efficient. This version of human capital theory posited that the more technological the environment, the more beneficial was education (Marginson 1997). That is, ‘technological change enhanced economic competitiveness and promoted
demand for education, while at the same time education promoted technological change’ (Marginson 1997: 110). In this way, the use of the recurring motif ‘innovation’ in school education policies and budget texts is implicated in human capital theory. In Section Three of this chapter, human capital theory is discussed further in relation to the policy narratives that have emerged through this study.

**Effectiveness and Efficiency**

Like ‘innovation’, the motif ‘effectiveness and efficiency’ is also linked into human capital theory, and for the same reason. That is, the more education a person has the more productive (and therefore more effective and efficient) they are said to be. This it is argued, is particularly the case the more technological the workplace. Also, some policies suggest that the use of digital technologies in schools will improve the schooling sectors’ efficiency and effectiveness. One interpretation of this can be that more will be achieved with less. As a political operative stated in one of the research conversations, ‘if the pedagogical base to the whole thing doesn't take advantage of the fact that there’s going to be a little bit of freeing up of teacher time if it is used well, then you lose a golden opportunity’ (DX 16 August 1999: lines 231-234).

The Strategic Framework for the Information Economy (Commonwealth of Australia NOIE 1998a) states that ‘online technologies, in themselves, will be an important tool in the cost effective provision of education and training’ (Commonwealth of Australia NOIE 1998a: 10). The Queensland government states that ‘government resources must be managed and used efficiently and cost-effectively to deliver services that represent value for money and meet community expectations’ (Queensland Government Department of Communication and Information, Local Government and Planning 2000: 33). The policy document Learning in an online world states that ‘schools are also major participants in the developing information economy, as they increasingly operate online to improve their effectiveness and efficiency’ (EdNA 2000a: 2).
The Secretary of the Tasmanian Department of Education Dr Martyn Forrest (2001) has indicated however, that demonstrating increased ‘effectiveness and efficiency’ from the resources allocated to the implementation of the schooling sector policies is difficult.

From the point of view if you were the Secretary of the Treasury this is fairly high risk stuff: “Tell me what benefit has emerged from this huge expenditure so all these people in this room know what the benefits are, you and your computers and so on, are providing to the state or territory or whatever” It’s a question now we [chief executive officers] have to deal with certainly personally every year in the budget committee (Forrest 2001: lines 121-125).

Dr Forrest was indicating that efficiencies were difficult to demonstrate in schooling as a causal result of the investment of funds into digital technologies. He continued his speech by asking

how are we going to sustain this? Because this is not as I say, going to be expenditure that we’re all going to get in there and suddenly have all these computers, and then it’s going to disappear. It’s actually going to grow and it’s going to grow quite seriously and I think we’re going to be faced with some fairly serious questions. So there’s debates about whether there’s enough money for public schools (Forrest 2001: 3).

Therefore, the recurrent costs for the hardware, software and services required to implement the schooling sector digital technologies policies suggests that these initiatives are not cheap, albeit that the political imperatives sitting behind this language in the policies and budget texts seems to be to achieve cost savings. As a chief executive indicated during one of the research conversations: ‘it [implementing digital technologies goods and services in schools] will be driven initially by savings and the task always in education is to identify how savings can lead to improved provision’ (GH 15 July 1999: lines 319-321).
Here it is contended instead that it is a myth to assert that the universal use of digital technologies in schooling is a cheap initiative, leading of themselves, to an improved provision of schooling. Indeed, the Secretary of the Department of Education in Tasmania, Dr Martyn Forrest (2001) has indicated that given the amounts of public funding allocated to these initiatives, Treasury officials and Ministers of the Crown will not indefinitely continue to make the leaps of faith that are currently involved.

A senior state bureaucrat raised this as a concern in one of the conversations held as part of this study. He indicated that

> we don't add value to learning using technology. Now we’re not on our own. Most businesses rarely add value using technology as well. It's a big issue. I mean your investment doesn't anywhere match your return and that shouldn't be the case, and that's the case we have in schools. And so it's fair to say, if we did studies on most schools, they would’ve actually been better spending their money on something else, like extra salaries or whatever, not on technology. Now we need to think about that differently because we do need to get that value-added component [to using digital technologies in schools] (MN 20 July 1999: lines 123-132).

These questions raised by senior bureaucrats within public schooling systems raise concerns about the future of public schooling in the 21st century and in particular in relation to its tradition of being ‘free, compulsory and secular’.

Since every school has the potential to be able to deliver courses through the Internet, it may be that digital technologies will be used to offset the emerging and projected teacher shortages (cf Parliament of Australia 1998; Preston 1997). To use digital technologies in this way however, would be to broaden the use of distance education provisions beyond those schools already specifically identified as schools of distance education. This then would raise the legislative question of ‘what is a school’. In South Australia a review of the Education Act raised this stating, ‘the concept of what “school” or “schooling” is in terms of time and place has changed’
(Government of South Australia 1999b: 8). It continues, stating that ‘traditional definitions based on time spent in a classroom limit the possibilities for learning, whether through off-campus experiences, or online delivery mechanisms. The era of the global classroom has well and truly arrived’ (Government of South Australia 1999b: 8). The issue of ‘what is schooling’ was also raised in the research conversations conducted for this research. One of the political operatives interviewed commented that

it’s going to bring us to all the arguments of class sizes and different utilisation of schools. I don’t think in another five years we’ll be necessarily talking about school as being sort of 9.00 to 3.00 ish (BX 21 July 1999: lines 403-406)

This would suggest then, that previous legally enshrined traditions that schooling has a social purpose (Reid 2000), mostly served by physically attending school, are being reconsidered and reauthored; the importance of physically attending school (for at least some of the time) is being revisited.

‘Information Rich/Information Poor’
The motifs ‘information rich’ and ‘information poor’ in the policies and budget texts are used to address the question of ‘access’. The phrases refer to providing access to the telecommunications services and computer equipment required to use the Internet and therefore to access the information available: ‘ensuring equity of access to the opportunities online is critical if we are to avoid a social polarisation between the so-called “information rich” and “information poor”’ (Commonwealth of Australia NOIE 1998a: 9). Concerns about a developing gap between those identified as ‘information rich’ and others identified as ‘information poor’ is well articulated in commonwealth ‘whole of government’ and schooling sector policy documents (cf EdNA 2000a; Commonwealth of Australia NOIE 1998a), although less so at the state and territory level. It is also a concern that has been identified in international forums.

A Strategic Framework for the Information Economy states that
the government is committed to ensuring that all Australians, including the disadvantaged and remote, have adequate, affordable access to online services. Access to affordable communications, internet (sic), public access points and support for training are all important (Commonwealth of Australia NOIE 1998a: 8).

This same document also states that ‘the private sector is driving, and will continue to drive, the transition to the information economy’ (Commonwealth of Australia NOIE 1998a: 6), and that ‘the government encourages industry self-regulation’ (Commonwealth of Australia NOIE 1998a: 7). This generates a policy dilemma for governments: how do governments leave developments to the private sector and not intervene in markets, yet at the same time encourage the market to operate benevolently so that inequities do not develop?

One of the chief executive officers participating in this research made the following comment concerning the access to the telecommunications services and equipment required by schools to introduce the use of digital technologies:

I think what Australia is doing is what it's always done in the past, and it's relied on the serendipity of the markets, which I think in this day and age, is naive to the extreme (KL July 26 2000 lines 208-211).

The motivations of the markets and the intentions of governments in providing services to the community are different. The motivation for the market is to make profits in a competitive environment, the motivation for the government here, is to ensure social cohesion and avoid social polarisation. Given the advocacy for using digital technologies in public schooling is included in the priority areas for action in A Strategic Framework for the Information Economy, the provision of ‘free, compulsory and secular’ schooling in the 21st Century looks increasingly problematic.
The potential implications of using digital technologies as a core component in the provision of schooling was recognised internationally in the United Nations Educational, Scientific and Cultural Organisation (UNESCO) Report (Delors 1996), Learning: The Treasure Within (the ‘Delors Report’). This report warned about divides developing within communities based upon who does and who does not have access to digital technologies and the opportunities they provide.

The greatest cleavages are likely to occur within given societies, between those who can use the new tools and those with no possibility of using them: there is a real danger of societies with fast and slow tracks, depending on individuals’ access to technology. That is why the Commission considers that the emergence of information societies is a challenge to both democracy and education, and that the two aspects are closely interrelated. Education systems have a major responsibility: it is their job to give everyone the means of coming to grips with the proliferation of information, that is of displaying a critical spirit in sorting and ordering information. It is also their job to help people to stand back from the society of media and information that could tend to be nothing more than a society of the ephemeral and the immediate (Delors 1996: 65).

Concerns about inequities raised in the Australian policy language used, gives the impression that inequalities are only potential risks that have not happened yet and the policy initiatives proposed will avoid it happening. This is to ignore the research already conducted concerning this issue. For example, a report commissioned by the MCEETYA Real Time: Computers, Change and Schooling has highlighted there is a growing gap between the ‘information rich’ and ‘information poor’ in Australian schools (Meredyth et al 1999). This is in part occurring along a division between city and country locations (Meredyth et al 1999). This report also indicates that uneven diffusion rates of digital technologies in schools are compounded by disparities in the home use of them. Meredyth et al (1999)
draw on international data to illustrate their point, indicating that ‘in Canada in 1996, 20 per cent of households with the highest income were four times more likely to have a home computer than the 20 per cent with the lowest household incomes’ (Meredyth et al 1999: 17). In Australia at November 2000, 56% of all Australian households had a home computer and 37% of all Australian households had home Internet access (ABS 2001b). ABS data indicates that higher levels of access to computers and to the Internet occur in households with higher incomes, and in households located in the metropolitan area (ABS 2001c). At November 2000, 21% of households with an income less than $49,999 had access to the Internet at home compared to 57% of households with an income of $50,000 or more (ABS 2001c). Of the households with Internet access at November 2000, 40% were located in the capital cities compared to 32% located outside of the metropolitan areas (ABS 2001c). This would suggest that home use of digital technologies is directly linked to household income, with those with smaller incomes being less likely to be able to access the Internet from home. Furthermore, there is less access to the Internet amongst those located outside of metropolitan areas compared to those located in metropolitan areas. By basing distinctions between the ‘information rich’ and ‘information poor’ on the basis of access to the Internet, it can be seen that already there are differentials based on income and household location existing within Australian society.

Alongside of this it was indicated earlier in this chapter that all governments in Australia are moving some of their services into an online environment (cf Office for Government Online 2000). As has been demonstrated, this includes schooling (cf Commonwealth DETYA 2000b; Commonwealth of Australia NOIE 1998a). It is not possible to access online government services such as schooling, without having the equipment and access to the appropriate telecommunications services to do so. To locate the provision of government services including the provision of schooling in an online environment when there is not universal access to
the infrastructure such as telecommunications, hardware and software, is to deliberately build in inequalities.

The private use of digital technologies requires a personal income that is able to afford the equipment, consumables and ongoing telecommunications costs. This makes poverty and the use of digital technologies, such as that required to undertake online schooling, directly linked. Without access to a telephone line at an affordable price (which may mean at no cost), and without the hardware and software required to connect to the Internet, all the technological skills in the world will not avoid an uneven diffusion in the access and use of digital technologies. Those without the access to the equipment therefore cannot participate in online schooling where it includes accessing such activities remotely from home. A concern for public schooling systems then becomes how to implement digital technologies policies where the diffusion of the equipment and access to telecommunications services is uneven within and across the states and territories.

This then becomes a broader issue in the communities that constitute Australian society. If we accept at face value the policy language and logic, that through the use of digital technologies there is a greater access to information, and since (so the rhetoric goes) ‘knowledge is power’, then if there is an uneven diffusion of the use of digital technologies, this will mean an uneven diffusion of information, knowledge and power. Existing advantages and disadvantages based upon wealth therefore, have the potential to be further accentuated. Given this, it is important here to recognise Australia’s obligations as a signatory to the United Nations Convention on the Rights of the Child (HREOC 2000a). This is important in considering how public schooling can be provided to all young people, and in particular to remote and isolated, often Indigenous communities, as the following quick illustration shows.
In the National Inquiry into Rural and Remote Education, the HREOC reported that fifteen East Arnhem Land Homeland communities were without school facilities and educational resources (HREOC 2000b). HREOC estimated that approximately seventy-five students on thirteen East Arnhem Land Homelands were affected, with numbers completely unknown for the other communities (HREOC 2000b). It further reported that for these communities distance education using HF radio was not an option since the children were not sufficiently fluent in English, the language of instruction (HREOC 2000b). Furthermore, it reported that the Homelands lacked the physical infrastructure to use technologies such as computers (HREOC 2000b). While the provision of schooling to these communities may be costly, in order to honour Australia’s own laws and its international obligations, these communities and others in similar predicaments require the provision of appropriate schooling.

If the meaning of public schooling in Australia in the 21st century includes moving government services online, without moving the general populace online, this is likely to create social dislocation and the polarisation about which the government policies are concerned. There has been little attention focused in Australia on the consequences of an uneven technological diffusion, or on the role of private markets when government services are moving online. It is argued here though, that an uneven diffusion of access to digital technologies underpins the concerns expressed in the policies and budget texts about ‘overcoming the tyranny of distance’, which will be discussed shortly.

The emerging divide between the ‘information rich’ and the ‘information poor’ are important concerns for Australia, and this makes infrastructure important. Without the necessary infrastructure, achievement of the stated social priority of equality will not be possible and these will be hollow words. Addressing the social issues raised in these polices should become legitimate plots in the narrative of the authors. They should not be destined to become myths. This is important if Australia is not to become more
inequitable than it is already (ABS 2000b). The policy statements concerned about an equitable Australian society must be translated into concerted action. Recognition of these social issues therefore, is just the beginning of a story.

**Regional, Rural And Remote**

Policies and budget texts have started to include the recurring motifs of ‘remote and isolated’ or ‘rural and regional’ and variations on that theme. It is posited that one of the reasons this is done is as a political way of accessing resources and influencing government directions. For example, a report prepared by Trinitas Proprietary Limited (2000) on behalf of the Curriculum Corporation for federal cabinet, seeking funding for the development of online Australian content for use in schools, began by stating that

this report is about delivering the promise that information and communications technology (ICT) will dramatically improve:

- educational outcomes for all Australian school children; and
- educational opportunities in rural and regional areas (Trinitas 2000: Executive Summary).

It is curious to see a distinction made between the educational outcomes of all students and the opportunities provided to those students in rural and remote areas. This is to imply recognition that the opportunities available to rural and remotely located students, presently are unequal to those in urban areas. The ‘Trinitas Report’ (2000) goes on to say that

ICT [information and communication technology] is a powerful tool to support this new investment in social capital. … as part of a sensible mix of physical and electronic school activities, comprehensive digital curriculum resources allow school systems to improve significantly the experience of people living in rural and remote communities (Trinitas 2000: 82).

While there is debate about the accuracy of the assertions that claim that digital technologies are responsible for improved student outcomes (cf
Bennett and Lockyer 1999; Wellburn 1996), rural, regional and remote people nonetheless are specifically identified as beneficiaries in such texts.

It is asserted here that using such language is a political ploy for the following reason. The audience for the ‘Trinitas’ submission was federal cabinet. This is a coalition between two conservative political parties, the Liberal Party and the National Party. The National Party constituency is located mainly in regional, rural and remote locations (cf The National Party of Australia 2001). The ICPA, representing parents whose children are located in rural and remote locations, lobby these politicians.

The outcome from the Trinitas submission was the allocation of $34 million over five years by the commonwealth, to the development of online Australian content through the Backing Australia’s Ability (Commonwealth of Australia 2001a) initiative. This would suggest that it was politically astute to prepare a cabinet submission seeking funding that specifically mentioned the benefits for the regional, rural and remote constituencies. Arguably, the chance of cabinet approval was enhanced since there could be seen to be political advantage to those making the policy decisions. This is not to suggest that rural, regional and remote communities are not entitled to be considered in funding decisions, but rather to point out that the language chosen for use by the bureaucrats, was mindful of their Ministers’ political priorities. That is, the authors provided the politicians with particular usages of language that matched what it was they wanted to hear.

Earlier it was asserted that digital technologies are seen as an equalising agent between rural and remote, and urban populations. This is reflected in the NOIE policy, A strategic framework for the information economy (1998a) which states that

for rural and remote Australia, online technologies offer a unique opportunity to address educational disadvantage stemming from the tyranny of distance. Not only do they facilitate communication
between the student and the learning institution; they also enhance interaction between the students themselves, allowing them to share ideas and work on group projects. Distance education is also increasingly important in maintaining and improving workforce skills (Commonwealth of Australia NOIE 1998a: 10).

The policy document *Learning in an online world* (EdNA 2000a) picks up the access to and application of online resources and services required in curriculum practice, and notes that these can be used in both classroom and distance settings (EdNA 2000a: 4). The DECS*tech* 2001 Project in South Australia claims it is focusing ‘on the installation of local area networks (LANs) in all schools and the provision of high speed telecommunications to link schools, regardless of their geographic location in the state, to the outside world’ (DETE (South Australia) 1999c: 7). Statements such as this seem to be made however, regardless of, or without articulated recognition of the physical difficulties that have hampered putting the necessary infrastructure for schooling purposes into rural and remote locations. Therefore, while rural, regional and remote issues are specifically acknowledged within the texts, in practice they are often amalgamated into the broader departmental initiatives aimed mainly at populations located in urban areas where the telecommunications and electricity infrastructures are less of an impediment to the initiatives promulgated being achieved.

**Overcoming The Tyranny Of Distance**

Along with the recurring motif of ‘rural, remote and isolated’ is the motif within the policies and budget texts that asserts that technologies will overcome the ‘tyranny of distance’. In 1966 the Melbourne historian, Professor Geoffrey Blainey released a book called *The Tyranny of Distance*, in which he suggested that Australia’s vast geographical distances had shaped the psyche of its population. Since the first coining of this phrase, and with the introduction of digital technologies, we now see it asserted that the difficulties, presumed to be attendant with the phrase ‘tyranny of distance’, can be overcome with the advent of these digital
technologies. For example, the (then) Chief Executive of NOIE has stated that

if one element typifies the Australian experience, it is the efforts we as a nation have put in to defeating the “tyranny of distance”. Whether by the flying doctor service, wireless communications, or the “bush telegraph” our society has developed around the notions of vast distances and sparse populations. Australia is unique in the world with its small population spread over an enormous land mass. IT & T [information technology and telecommunications] can thus be a key to defeating the tyranny of distance faced by Australia and Australians. Governments at all levels are putting an emphasis on IT&T infrastructure and policy development, to encourage and (sic) development in all areas of Australia (Twomey 1998: 1).

EdNA Reference Committee (ERC) (1998), in its position paper, Towards an Australian Strategy for the Information Economy, which was prepared in response to the Ministerial Council for the Information Economy paper, A strategy for the information economy, stated that ‘the information revolution offers major opportunities to improve the delivery of education to rural and remote Australia, thereby minimising the tyranny of distance’ (ERC 1998: 8). Mr Peter Browne, the (then) Director General of Education in Western Australia stated that

it is terribly clear to me, that online learning, or the umbrella of online learning, is going to be the absolute salvation of rural and remote education in Western Australia. And I think it will be your state’s (Browne 2000: 1).

Policies and budget texts of Australian governments include then, the use of the motif of ‘overcoming the tyranny of distance’, along with referring to the ‘remote and isolated’ or ‘rural and regional’ locations, in their texts. While the use of this language is occurring, concerns have been expressed that the tyranny of distance has as yet not been overcome. This has been
reflected not only in some of the texts reviewed but also through the research conversations, and in particular with the remotely located parents involved in this study. These parents each reported sentiments similar to the one that follows. This parent described the telephone system to her home located in a remote tourist area as ‘antiquated’ and that it was ‘too slow to do anything useful with the Internet’ (P4 20 March 2000). She also indicated that the community had a shared generator for the provision of electricity which also affected how they could use computers and the Internet (cf P4 20 March 2000).

One of the volunteers working with families located in remote areas, supporting their use of digital technologies, related the following story as part of a research conversation we held.

Infrastructure is a killer. The telephone lines themselves are, well. The bulk of them are digital radio concentrated systems. So they’ll only operate at about 9600 BPS [bits per second] anyway, although you can tweak things around, and maybe get it up a bit better. Telstra have got a 1800 help line, which will help people on digital radio to get their Internet stuff a bit better. Those with copper lines are sort of hopeless; they are going to have real trouble. We worked with one lady out of the back of [a remote location] who had a copper line in. Anyway she decided that she was going to put another line in, and the local paper had an ad from Telstra saying “if you ring this number, in this month we will put a second line in for half price.” So she did. And it cascaded through the, it finished up in Grafton, and the guy just said “certainly madam, we’ll have somebody out there. Oh, we’ll bill your account with whatever it is; $79 or something”. And it cascaded through to Launceston, and he said “Yes, madam, we’ll have somebody out there at quarter past two on Tuesday afternoon.” And the local boy rang and said I have to put in 27 kilometres of underground cable down, to put your second line in. All for $79 I might point out. So Telstra gave her a satellite phone. They reckoned that was cheaper. But we got her on
[to the Internet]. The best speed we got was 2400, two thousand four hundred bits per second. She could use email, but only just (IJ 4 April 2000: lines 556-590).

Submissions by groups representing the interests of non-urban people to government inquires (cf HREOC Inquiry into Rural and Remote Education 2000a; Commonwealth House of Representatives Standing Committee in Primary Industries and Regional Services, Infrastructure and Regional Development 2000), also have commented upon the lack of telecommunications and associated infrastructure in their respective regional, rural and remote areas of a sufficient level that the promises of the digital technologies policies are fulfilled, and for the tyranny of distance to be overcome. These submissions reflect concerns about increasing rather than decreasing disadvantage between urban and non-urban people in the provision of services such as health, education, and the telecommunications infrastructure required to access online government services. This is important considering that the states, territories and federal governments, are moving their delivery of services (including education and training) into an online environment (cf Commonwealth of Australia, Office for Government Online 2000). The private costs associated with distance and isolation then are critical disadvantaging factors in the provision of education to regional, rural and remote areas of Australia. This makes education economically inaccessible for some. This is particularly the case for Indigenous communities (HREOC 2000b).

Telecommunications and the provision of distance education
Accessibility of distance education is increasingly reliant on the sustainability and quality of the HF radio, and of digital technologies such as telephone and the Internet. The HREOC National Inquiry into Rural and Remote Education (2000a, 2000b) found however, that Internet access remains costly and unreliable in many rural and remote areas and in some areas there is no access at all. In addition, regionally based technology infrastructure requires local people with the skills and expertise to maintain
and support these systems. At the moment, people with these skills are not immediately available in rural and remote areas and it is not uncommon for families to wait weeks and months for installation, maintenance and repairs to be conducted. Home tutors therefore struggle to ensure their children have the access they require (Sidoti 2000; HREOC 2000b).

A project funded through Networking the Nation which concluded in 2000 provided support in using digital technologies to rural, regional and remote families. One of those working on this project described the sort of work they undertook.

Simple things like we always recommend to people up there that they put an external modem in, rather than an internal one. Simply because if something goes wrong with it, you only got to send a modem away. You know all those sort of simple things (IJ 4 April 2000: lines 541-544).

The provision of telecommunications services to regional, rural and remote communities however, is a politically charged issue. In a commonwealth government telecommunications update in January 2001 it stated that on 19 March 2000, the Commonwealth Government established the Telecommunications Service Inquiry to independently assess telecommunications service standards in metropolitan, regional, rural and remote Australia. This followed the [Liberal/National] Coalition’s 1998 election commitment not to further privatise Telstra until such an Inquiry deemed services to be adequate (Commonwealth DCITA 2001a: 1).

This Inquiry found that a significant proportion of those who live and work in rural and remote Australia have concerns about key aspects of services, which at this stage, are not adequate. Concerns in rural and remote areas centred on delays with installation and repair and the reliability of basic telephone services, mobile phone coverage at
affordable rates, and reliable access to the Internet and data speeds generally (Commonwealth DCITA 2001a: 1).

One of the federal government responses to this Inquiry has been to establish a three year joint venture with Telstra of a $50 million Internet Assistance Program. Under this program a minimum Internet speed of 19.2 kilobits per second has been promised (Commonwealth DCITA 2001b: 1). This speed is considerably less than the 64kbps Commonwealth DEST (previously DETYA) identified as being inadequate (Commonwealth DETYA 2000a) for schooling purposes.

Electricity
The provision of the infrastructure components, that of telecommunications and electricity, is very much location dependent, and without access to the technology (which means access to telecommunications and electricity required to run the technology), students can be prevented from accessing educational opportunities. The following story illustrates this point.

My son received a computer from Longreach School of Distance Education [LSODE] for Grade 6 last year and to join Telstra Big Pond Internet we were given 20 bonus hours free on the net but because of no electricity we only can use 4 hours of our 20 hours. … My son could only use it at night when we had the generator on but then we were juggling other appliances and he couldn’t have it on for long as we could blow up the computer with fluctuating power and then it was time for bed. Therefore he didn’t become as proficient at using the computer as the children on grid power (HREOC 2000b: 38).

In a similar vein, a student commented as part of this research that instead of using a computer he used an electric typewriter. He further indicated that in the absence of mains electricity to undertake his distance education lessons, he used a ‘car phone, connected up in the house, by a tractor battery’ (S3 10 April 2000: lines 68-69).
The cost of the provision of electricity to both schools and individuals in urban as well as non-urban locations will require monitoring over time, given some states have privatised this provision, and the outcomes on costs of privatisation to individuals and institutions, while predicted, have not as yet been widely reported (cf Quiggan and Spoehr 2001). Given the present public schooling sector policies are urging the ubiquitous use of digital technologies, the concerns raised in this study then, illustrate that ‘location independence’ demands a robust and affordable infrastructure if the tyranny of distance concerning the provision of public schooling is to be overcome using digital technologies. Public schooling in Australia then, has some complex interplays of policy to address if a commitment to the tradition of ‘free, compulsory and secular schooling’ is to remain with its assumption that students throughout the state or territory can access similar opportunities.

Collaboration And Democracy
The recurring motifs of ‘collaboration’ and ‘democracy’ are liberally sprinkled throughout the national policies in particular, and in some of state and territory policies and budget texts. These two words have tended to be used for a variety of purposes, in different contexts and with different intentions, but rarely if ever are they defined. Most commonly however, they seem to be used either to refer to the general climate within which identified initiatives should be implemented, or as student outcome statements.

Democracy
In the paper Outcomes Reporting and Accountable Schooling (Kemp 1999b) presented to the Curriculum Corporation conference in May 1999 and listed on the MCEETYA website as a key paper in relation to the Adelaide Declaration of the National Goals of Schooling, the (then) federal Minister for Education, Dr Kemp referred to ‘Australia's national and democratic commitment to equity’ (Kemp 1999b: 8). He was asserting a cultural climate for action. In 1998 in a speech to a UNESCO conference
Dr Kemp provided some insight into how he saw the use of digital technologies as a democratising force.

Several developments around the world present opportunities for wider democratisation [meaning] more power being held by free citizens and institutions. Technology has been and is a democratising influence. … Technology has dramatically reduced the significance of what we in Australia used to call the “tyranny of distance”. … The world economy is slowly becoming more globalised [and] this is a democratic development – of an economy in which the same rules apply to all, irrespective of their nationality (Kemp 1998: 1).

Kenway et al (1994) however, argue that a democratic commitment to equity in an environment where market choices in school education are actively encouraged, means that this language refers to a freedom to equally choose a schooling future, irrespective of any other social, cultural or economic consideration. Marginson (1997) suggests that the view that ‘equal treatment before government is the freedom of choice in schooling’ (Marginson 1997: 142), puts ‘economic and social self-interest on the high moral ground’ (Marginson 1997: 142). In a similar vein Kenway, Bigum and Fitzclarence (1993) posit that

markets require a shift in focus from the collective and the community to the individual, from public service to private service and from other people to the self. Markets redefine the meaning of such terms as rights, citizenship and democracy. Civil and welfare rights and civic responsibility give way to market rights in consumer democracy (Kenway, Bigum and Fitzclarence 1993: 116).

Individual self-interest becomes paramount in such competitive market arrangements.

Dr David Kemp has been a strong proponent of his particular view of democracy as evidenced through his speeches and policy directions (cf Kemp 1998, 2001). His views however have been advocated within a
market of public and private schooling, where parents are free to choose the place to educate their children, and where schools compete with each other using symbolic goods such as digital technologies. Allan Luke (1997a) warns us though, that any political discourse will adopt and adapt useful terminology from other adjacent discourses. This view is consistent with Mouffe’s (1979) argument that one of the ways Gramsci (1971) saw that hegemony could be achieved was to use the language of those opposing the commonsense directions being proposed. That is, complicit acceptance can be achieved through the appropriation of the language of those who otherwise oppose the exercise of hegemony in particular circumstances.

National collaboration
The use of the word ‘collaboration’ seems to be more heavily used in documents of commonwealth and national agencies than in state and territory government documents. To illustrate, the national School Education Action Plan for the Information Economy (EdNA 1999a) suggested some principles for taking action to further the use of digital technologies in schooling, stating that

as a first step all education authorities need to agree on a strategy for the development of and access to online content development, involving the following: …underpinning principles, including a commitment to collaboration (EdNA 1999a: 9).

Similarly, the Commonwealth DEST (previously DETYA) policy Learning for the knowledge society (Commonwealth DETYA 2000a) states that governments need to work with each other, with the education and training sector and with industry to promote collaboration and encourage new links to maximise the value of new investments required and to exercise a leadership role in the information economy (Commonwealth DETYA 2000a: 10).

Learning in an online world (EdNA 2000a) reiterates the view that a national approach is required. It states that ‘within their areas of constitutional responsibility, all Australian governments contribute to the development of a strong school education sector, able to play its key role in driving a vibrant information economy and knowledge society’ (EdNA
2000a: 3). This document then defines the respective responsibilities of the states, territories and the commonwealth for the delivery of public schooling which includes the use of digital technologies. The calls from these commonwealth and national agencies seem to reflect a revisitation of the ‘new federalism’, to which Lingard et al (1995) referred, as discussed earlier. While these texts advocate national approaches to the proposed use of digital technologies, this commitment does not seem to have been reciprocated with the same gusto by the states and territories in their policy texts.

One of the motivations for advocating a national approach to schooling given the advocacy for the ubiquitous use of digital technologies, according to a senior commonwealth bureaucrat participating in this research, has been that ‘it’s become more apparent to everybody involved in it [developing policies advocating the use of digital technologies in schooling], that nobody has the budget to do this all themselves, and they need to cooperate’ (EF 13 July 1999: lines 81-83). Of the millions of dollars allocated each year to implement the digital technologies in schooling policies however, the level of national cooperation is limited to only a small percentage of these overall funds.

The nationally collaborative activity most strongly supported by each of the states, territories and the commonwealth, is the Le@rning Federation SOCCI project. The development and use of the name Le@rning Federation, used to describe this project, has been adopted in 2001, the year celebrating one hundred years of the Federation of Australia. Le@rning Federation (SOCCI) is a national initiative, supported by the commonwealth and each of the states and territories, and while the responsibilities for schooling remain with the states and territories, the use of this name is not accidental. Indeed, this name can be interpreted as encapsulating the intentions for a ‘new federalism’ (Lingard et al 1995).
Other activities such as the purchase of goods including computer hardware and software is occurring at a state and territory level, although in the marketplace there could be financial gains by establishing multi-state and national approaches, as a chief executive officer participating in this research indicated.

In the rollout of hardware and software, towards the rollout of infrastructure, it is patchy at best, and I think if Australia was wise what it would have done is it would have focused on doing those sorts of things nationally to avoid duplication of funds and to avoid duplication of infrastructures (KL July 26 2000 lines 218-222).

Other senior bureaucrats agree with this chief executive, as indicated here by this state level chief executive. This officer was discussing the schooling sectors’ relationships with telecommunications policies. ‘It’s actually much more of a national question. It’s to do with telecommunications and where Optus sits and Telstra and Vodaphone and all the rests sits and what’s happening with the satellites’ (DD 20 August 1999: lines 226-232). Like this state level chief executive, a senior state level bureaucrat also argued that leveraging benefits could be achieved with a national strategy to a number of the infrastructure issues, suggesting that this is a necessary central function, rather than asking every principal to be an expert negotiator with the various multinational companies able to offer services to schools.

One of the things, we’ve got states trying to replicate each other with software, telecommunications strategy, Internet strategies. We can’t continue that because of the nature of the changing role of technology. And so, the dilemma is with the focus being more on the local, it’s actually putting enormous pressure on principals as the key person making the decision because if you don’t have the plan right, and you don’t actually have the business or the learning plan, how are we going to improve learning is the issue. You’re never going to get it right (MN 20 July 1999: lines 746-755).
Another chief executive indicated a preference for changing the leadership, management and administration of school education as the following extract indicates.

My view, my very strong view is that we have to do better than eight separate systems. And that’s the kinds of economies of scale that you get out of a common approach, and also the improved quality you get out of doing something once comprehensively rather than eight times not so comprehensively. The attractions are enormous. I think information and communication technologies offer that opportunity, and offer the opportunity for everyone throughout the entire network to participate in the process. So, you know, there are big opportunities there, but we've not yet managed to crack through the bureaucratic means (GH 15 July 1999: lines 24-33).

A similar view was expressed by one of the distance education principals.

I mean it’s crazy that in a community where we have less than 20 million people, I don’t know how many students in schools that is, but it is a very small number, but we’ve got eight different education systems (AZ 26 July 1999: lines 91-94).

Another distance education principal stated that

one of the problems that we’re facing in a continent the size of Australia is quite clearly, if you think that people from all over the country are going to demand access to the education that is available in every metropolitan area, it makes no sense at all, that each state tries to deliver the whole curriculum to its own geographic territory. It is really high time that we started to look at curriculum delivery across the country, collaboration in a fair way, you know, perhaps reflecting the level of resources that people have, or indeed the populations that are being served. But whatever the mechanism is, it really makes no sense that we all try to invent the same wheels (CY 17 August 1999: lines 426-435).
These responses can be interpreted as reflecting that each of these senior officers in their own ways is struggling with the question of how best to structure the provision of public schooling given the competing pressures that have arisen as a result of advocating the widespread use of digital technologies in schooling. Advocating a nationally, collaborative approach to managing the costs involved in the provision of schooling which now includes the ubiquitous use of digital technologies has been the conclusion they have each reached. Achieving the objectives outlined in the digital technologies policies then, is seeing proposals for modernist and centralist approaches to achieving these objectives, which includes moving to national arrangements at least for the provision of digital technologies goods and services in schooling.

Students collaborating
Claims for improving the opportunities for students to collaborate by using digital technologies also are raised throughout the policy texts at the state, territory and commonwealth levels. For example, one purpose of the ‘Global Classroom’ project in Victoria was to develop wide-ranging skills in students (cf Education Victoria 1998). Its documentation stated that ‘working collaboratively with others provides students with the potential to develop leadership, organisational, project management, cooperation and negotiation skills’ (Education Victoria 1998: 1). The Strategy for generating online curriculum content for Australian schools (Curriculum Corporation 2000b) suggests

learning and information technologies enable collaboration and communication to extend beyond the classroom to others within the school, their community and around the world. Opportunities exist for greater collaboration, alliances and partnerships between schools (Curriculum Corporation 2000b: 4).

Contrary to the policy language, some observers claim that the improvements in collaboration and problem solving through the use of digital technologies in schooling have not been demonstrated (cf Bennett and Lockyer 1999). There are assertions though that individualistic
learning approaches as well as collaboration are fostered through the use of digital technologies, as indicated by Bennett and Lockyer (1999) in their literature review.

The general picture is of students becoming more active and independent in their learning and spending more time on project-based, collaborative and individualised tasks. … While many will find this picture encouraging, there is insufficient evidence to judge how widespread such changes are (Bennett and Lockyer 1999: 22). That is, suggesting that more collaboration is occurring as a direct result of using digital technologies, remains problematic. It is one of the difficulties of adopting technologically deterministic language in policy documents because identifying the changes and possible benefits from using digital technologies must be sourced to the technologies themselves. In order for students to undertake tasks which deliberately foster collaborative efforts however, requires teachers to assist students to undertake such tasks using digital technologies. This does not happen inherently as a result of advocating the use of digital technologies. Human intervention is required.

A missing motif – the communication age
While much of the language in the policies and budget texts refers to the ‘information economy’ there is little discourse about developing a ‘communication society’. This point was discussed in a few of the research conversations at my instigation. The following interchange was between a senior officer working for a telecommunications carrier and myself.

KM: And it strikes me that it would be nice to get into the rhetoric and the language, what is the communication society rather than the information or the knowledge society, which is terribly one way and passive.


This lack of discussion about the communication age is ironic given that one of the principal uses of digital technologies by students and teachers is for communicating, particularly via email; an importance that was
documented in the report prepared for MCEETYA Real time, Computers, Change and Schooling (Meredyth et al 1999) and was reiterated by the students who participated in this research.

In Summary
In drawing this section to a close, it has been argued that digital technologies form part of our social constructions and that digital technologies are created within these social contexts. It has been demonstrated that much of the language used in the policies and budget texts can be labelled as technologically deterministic, or the technologies can be viewed as neutral tools. Reflecting on the language that sees digital technologies emerge almost from ‘thin air’, requires us to consider how such approaches can be dangerous for the democratic purposes of schooling. A danger of promoting democratic outcomes from schooling within the language of technological determinism or in describing digital technologies as neutral tools, is to fail to recognise that to achieve a democratic future requires the political will to do so. Experience tells us that a democratic future will not be generated out of ‘thin air’.

It has been demonstrated too in this section, that there are some problems looming for the promotion of ‘free, compulsory and secular’ education in the 21st century. Infrastructure is central to achieving the ubiquitous use of digital technologies in schooling yet the provision of an infrastructure suitable for schooling purposes has been demonstrated to be inadequate, presently. Apart from computer hardware and software, in order for the intentions of the schooling sector digital technologies policies to be fulfilled, there is the requirement of access to electricity and telecommunications services. Furthermore, access to maintenance and technical services are required when problems occur with the equipment, or an unknown factor arises. To use these technologies for schooling purposes, irrespective of whether it is in a ‘face to face’ or distance education setting, the provision of these services must be reliable and predictable.
To achieve the level of use of digital technologies advocated in the schooling sector digital technologies policies therefore, has seen the recurring motif of the requirement of an effective and efficient telecommunications infrastructure, so that there is universal access and service. For some too, access to electricity remains problematic. From a policy perspective, one of the difficulties associated with such infrastructure issues is public schooling sector policies, and those policies from outside of the educational field such as telecommunications, electricity and industry development policies are brought together.

Authors of the policy *Learning in an online world* (EdNA 2000a) have recognised the importance of infrastructure by nominating it as one of its five areas of priority action, stating that ‘access to an advanced information and communication technology infrastructure that supports good teaching and learning’ (EdNA 2000a: 4), is a necessary prerequisite for the implementation of that policy. One of the identified goals in this policy in relation to infrastructure states that ‘hardware, technical tools and technical support will be provided to integrate information and communication technologies into school curriculum practice and to provide services to students in open and distance learning’ (EdNA 2000a: 7). One strategy to achieve this asks that

the Commonwealth consider policy options within the telecommunications legislative and regulatory framework to ensure bandwidth for school education that is:

- commensurate with the current and emerging needs of schools
- accessible from all parts of Australia, both urban and rural
- available at a cost that enables schools to participate and contribute to the information economy (EdNA 2000a: 8).

In Australia, the existing partly deregulated economic arrangements in the telecommunications industry (Barr 2000), the national electricity grid and the various state and territory electricity industries’ arrangements, are
making the digital technology policy contexts in school education, complicated. Learning in an online world (EdNA 2000a) goes some way towards recognising this by stating, ‘governments need to consider appropriate interventions, within a deregulated telecommunications market, to ensure the infrastructure is in place’ (EdNA 2000a: 8).

Over the course of the research period for this study however, there has been the recurring motif emphasising the necessity for the provision of telecommunications services of a sufficient quality to be useable for schooling purposes. While access to appropriate telecommunications is a problematic issue for schools, it is particularly of concern for those in regional, rural and remote locations. As such this issue was raised in the research conversations, in several reports released during the research period (cf HREOC 2000a; Commonwealth House of Representatives Standing Committee in Primary Industries and Regional Services, Infrastructure and Regional Development 2000; Commonwealth DETYA 2000a), and was discussed in forums such as Regional and Annual General Meetings of the ICPA (cf ICPA 2000). A challenge for the future then is to determine meanings of public schooling that reflect commitments to the provision of ‘free, compulsory and secular’ schooling, in an environment that includes the use of digital technologies.

Having considered the different parts of the whole (cf Ricoeur 1984) by firstly looking naively at the policies and budget texts, and then reviewing them to consider the language used, it is now time to make another circle to consider two narratives that have emerged from this study.
SECTION THREE
POLICY NARRATIVES

Two dominant narratives have emerged from the research conversations, and through seeking understandings of Australia’s commonwealth, state and territory governments’ policies and budget texts that advocate the use of digital technologies in schooling. These have been categorised here as economic and educational narratives. The narratives do not have pristine boundaries and there can be seen an intertwining of the narratives within the research space (as described in Chapter One), that have implications for the education field.

Economic Narrative

The relationships drawn between the role of schools, digital technologies and the economy is described here as an ‘economic narrative’. Throughout the thesis the linkages made in the policies and budget texts have been observed and interpreted. Now explanation, discussion and debate of this narrative will be undertaken to seek greater understanding of it. As will be seen, the economic narrative is strongly embedded into the texts reviewed, and can be considered to be comprised of several narrative plots.

Some policies say that educational and social priorities will in their wake create economic opportunities. The School Education Plan for the Information Economy (EdNA 1999a) illustrates this by saying at the outset that

for educators, the challenge is how best to change and improve the quality of teaching and learning in order to contribute to Australia’s development as an equitable, imaginative and economically strong knowledge society (EdNA 1999a: 1).

Here, the educational plot of improving ‘the quality of teaching and learning’ is put together with the social and economic plots of an ‘equitable’ and ‘economically strong knowledge society’. That is, schools are attributed economic purposes within the ‘information economy’ or the ‘knowledge society’. Little distinction however, seems to be made within
the policies and budget texts between an information economy and a knowledge society, with these terms seemingly used interchangeably. To reiterate Lamberton’s (2000) concern raised earlier though, some policy and budget texts seem to present their proposals from the flawed basis that the ‘information economy’ is a separate economy.

**Economic Activity, Schools And The Information Economy**

In national, state and territory whole of government and schooling sector policies and budget texts, schools are positioned both within the ‘information economy’ and within the economy more generally. The relationships between schools and the economy are made obvious simply in the titles of the policies. The Commonwealth DEST (previously DETYA) plan is called Learning for the knowledge society. An education and training action plan for the information economy (Commonwealth DETYA 2000a). This action plan links to the federal government’s policy, Strategic Statement for the Information Economy (Commonwealth of Australia NOIE 1998a) which (as previously indicated) identifies as its second priority to ‘deliver the skills and education Australians need to participate in the information economy’ (Commonwealth of Australia NOIE 1998a: 5). This second priority area of action set the context for the development and release in 2000 of Learning in an online world: a school education action plan for the information economy (EdNA 2000a). The Ministers of Education say in their Joint statement on education and training in the information economy, that ‘in the information economy, quality education and training is fundamental to the well-being of individuals, communities and nations’ (MCEETYA 2000a: 1). The Forward to the national policy, Learning in an online world (EdNA 2000a) states that ‘school education provides the foundation for the information economy and the knowledge society’ (Forrest 2000: 1).

Schooling is also linked more broadly into economic activities. The following sections from the South Australian policy Statement of Economic Directions illustrate this. It states that ‘investing in education is
central to economic progress.’ … [A major challenge is to] ‘ensure South Australia is at the forefront of a highly skilled, technological and internationally competitive workforce.’ … [Technological opportunities are identified as important because] ‘we need to develop skills in emerging technologies in education, training, business and industry so that we can collectively meet changing social and economic demands.’ … [This will be achieved by developing] ‘high level creative skills in information technology and telecommunications in students, ages 6 to 16’ (DETE (South Australia) 1999c: 2-4). In locating school education in the economy it is also allocated a role in leading the community to ‘global competitiveness and prosperity’. The following introductory comment by the (then) Premier Mr John Olsen in this South Australian Statement of Economic Directions illustrates this.

This Statement points out that an internationally competitive business climate and physical infrastructure, particularly in information technology, remain fundamental to the State’s economic growth. Education and training, innovation and environmental management have become more critical elements of the Government’s development framework. It is these factors that will be the key to South Australia’s future global competitiveness and prosperity (Government of South Australia 1999a: i).

The Queensland Government makes similar assertions as the following demonstrates: ‘as we enter the 21st century, the competitiveness of nations and regions will be underpinned by the intelligent use of communication and information services and technologies’ (Queensland Government Department of Communication and Information, Local Government and Planning 2000: 17). The Treasurer in the Victorian Government’s 2001-02 Budget Speech stated that ‘to build a successful, innovative and creative economy, we must give all Victorians access to skills development and information technology’ (Government of Victoria 2001: 6). Schools and the economy therefore are considered to be directly linked.
The economic purposes of schooling outlined in the policies reviewed are so strongly embedded that they are presented as if appearing naturally. In doing this Mouffe’s (1979) observations raised in Chapter Two are reiterated. There her observations that Gramsci (1971) rejected the traditional division between philosophy and commonsense (Mouffe 1979) were reported. She asserted that Gramsci had shown that both philosophy and commonsense operate but at different levels, and that both are present in the same ‘conception of the world’. She argued that this is always the function of a given hegemonic system expressed in the whole culture of the society (Mouffe 1979). She asserted that there is a continuum of understanding or a ‘definition of reality’ where ‘philosophy constitutes the highest level of elaboration and through which the intellectual and moral leadership of the hegemonic class is exercised’ (Mouffe 1979: 8). She has indicated that this is what gives hegemony its political nature. She posited that struggles at the level of philosophy are necessary in order for the commonsense of the masses to be appropriated. This makes it necessary to debate at the level of philosophy, the economic relationships raised in the digital technologies policies for the Australian public schooling sector. It is through the hegemony of commonsense that the economic narrative gains its strength. Furthermore, it appears that human capital theory is alive and well.

**Human Capital Theory**

The view that public institutions such as schools can contribute to the economic competitiveness of a country is underpinned by ‘human capital theory’. Marginson (1997) tracks the valuing of human beings as economic capital back to the late 1600’s. While acknowledging this extended history, pertinent here is the emergence since the 1960’s of ‘political human capital theory’ (Marginson 1997), and its implications for school education policies.

Marginson (1997) suggests that a political version of human capital theory germinated in the 1960’s when the commonwealth government convened
the ‘Martin Committee’ to plan the future of tertiary education, including its expansion. Bringing the economy and education more closely together with technological progress, was seen as a national investment in human capital (Marginson 1997). This version of human capital theory was based on the assumption that public funding of education was necessary for private benefits to flow (Marginson 1997). In the 1970’s the expressions of human capital theory developed to argue that the major cost incurred by an individual who is gaining more human capital through undertaking more schooling is the loss of possible earnings. Thus it was argued, while individuals can choose to forego income at one point in time, they can receive an increased income later, by postponing their entry into the labour market while increasing their educational qualifications. Such a view led to the assertion that the longer one stays at school, the more skilful the person becomes, and therefore the more productive that person is as an economic unit (Marginson 1997; Wilson Wyn, Reeders, and Woock, R. 1986). In this view schooling adds value to the economy by adding worth to the economic value of the individual’s productivity capabilities that he or she can offer the economy.

T.W. Schultz (1975) undertook the theoretical work linking education with the productivity of an economy. Welch (1970) linked the importance of education to the ability to understand and use the information generated by new technologies. Both argued that for citizens to adapt to technological changes required education, and as such this represented a major potential for the nation to be able to increase its productivity. They asserted that a more educated labour force would be more likely to be able to be more technologically adaptable (Schultz 1975; Welch 1970). The (then) Commonwealth Schools Commission report, In the National Interest (1987) drew on Schultz for justification of the application of human capital theory in school education policies.

He [Schultz] has argued that the major potential for education to increase productivity is its capacity to prepare persons to make decisions and adapt to technological change. … A more educated
labour force is likely to be more technologically adaptable, more flexible and more creative in making decisions and deploying resources (Commonwealth Schools Commission 1987: 4).

At the end of the 20th century the importance of people’s ability to adapt to technological change as a requirement for the economy can be seen in the following extract from the Strategic Framework for the Information Economy (Commonwealth of Australia NOIE 1998a) which states that there is an urgent need to recognise that Australia will be at a serious disadvantage in the global knowledge economy if it fails to produce workers, professionals and managers with the skills to work in the online environment. We need to make sure skills are available for the right industries at the right time (Commonwealth of Australia NOIE 1998a: 9).

Here human capital theory is concerned with the supply from schools to the economy of educated and qualified labour. This implicates schools in discussions about economic productivity. The above extract indicates one of the pressures for rapidly making changes, as the ‘urgent need’ to act is promoted.

Also linked to human capital theory has been the role of the schooling sector to credential the skills of human capital. Employers can then use the qualifications as a way of determining who will be accepted into and who will be rejected from the labour market. Marginson (1997) refers to this as ‘screening theory’, arguing that this operates on the demand side of the market. He draws the distinction between screening theory and human capital theory by asserting that the former focuses on the demand for labour and its exchange value, and the later is concerned with the use-value and supply side of the market.

The Economic Purposes Of Schooling And Digital Technologies
Marginson (1997) has argued that ‘education is implicated in economic policy discourse. … The management of education is shaped by
economically defined objectives and methods’ (Marginson 1997: 13). He argues that while schooling policies have linked the outcomes and purposes of school education to the economy through human capital theory since the 1960’s, that State intervention through Keynesian strategies for public investment remained until the mid 1970’s. He suggests however, that since 1975, the emphasis on linking the economy and school education policies has changed away from Keynesian economic strategies towards neoliberal ones.

In 1975 and after, Keynesian policies were abandoned and replaced by new policies shaped by market liberalism, and the character of government programs began to change. (Marginson 1997: 77) … The market liberals defined education as they defined government, in neoclassical economic terms. All problems in education could be understood as economic problems, and could be solved by economic reforms (Marginson 1997: 122).

Since 1975, the deliberate structuring of schools into the purposes of the economy has been highlighted in several reports including the (then) Commonwealth Schools Commission (1987) report, In The National Interest, which stated that

for more than a decade the political priority given to macro-economic policy has outweighed all other priorities. Recently, underlying weaknesses in the Australian economy have been highlighted by Australia’s adverse trading position. These events have focussed attention on major structural problems in the Australian economy and on the social infrastructure which affects economic performance. The quality of Australia’s education performance has thus become a focus of attention (Commonwealth Schools Commission 1987: 3).

Pusey (1992) suggests that when the Prime Minister in 1987 restructured some commonwealth departments to bring together the portfolios of school education, training and employment, this heralded a change away from viewing schooling as part of a set of complex social processes, to viewing
it functioning more as an economic tool. This is demonstrated in the following extract from the Prime Minister’s press release of 14 July 1987.

It will be important to address ourselves as effectively as we can to a number of micro-economic issues and in a sense there is none more important than the whole area of education and training and it is my judgement that the most logical combination of function is to have education, training and employment together … Therefore the shifting of employment and training to be associated with education is a positive decision based upon those considerations (in Pusey 1992: 148).

Similar directions in schooling policies in Australia, also have been observed overseas. In 1988 at the Ministerial Conference of the OECD, it was determined that ‘that which is education has become less clearly distinct from that which is economy’ (OECD 1989: 18-19).

Nature of the economic purposes of schools
The ways in which the economic purposes of schools are achieved has been observed to occur in different ways. Ashenden and Costello (1985) have identified five kinds of economic roles required of schools. These are to stimulate economic activities; develop and supply particular skills and capabilities; reduce the labour supply; reduce unemployment; and to select and allocate students to post school activities such as higher education, training and employment (Ashenden and Costello 1985).

In the National Interest (1987) outlined the ways it saw the relationships between schooling and the economy operating.

There are three principal ways in which the relationship between education and the economy is fashioned. The first of these is through the knowledge, skills and attitudes which education develops and which are utilised throughout the economy. The second way is through qualifications which education offers. These qualifications are prerequisites for entry to some occupations and the basis for selection to others. The third aspect of the relationship
operates through the labour market. In a well-ordered relationship between education and the economy there should be consistency in the way these three elements of the relationship impinge on education policy (Commonwealth School Commission 1987: 3-4).

In the last decade of the 20th century some observers have seen that economic restructuring is a dominant discourse in school education policy developments (cf Kenway et al 1994; Lingard et al 1993), and Kenway et al (1994) have asserted that government education policies in Australia always have seen as important the preparation of students for work in the labour market and for entrance into the economy.

Given this theoretical backdrop then, we can now consider the economic purposes of schooling outlined in the public schooling sector digital technologies policies and budget texts. This will be followed with interpretations of three economic plots. The first is a ‘human capital theory’ plot, that of preparing students with the required skills for the digital labour market in the ‘information economy’ (Commonwealth of Australia 2001a; Commonwealth of Australia NOIE 1998a; Government of South Australia 1999a; Queensland Government Department of Communication and Information, Local Government and Planning 2000). Within this plot, two subplots are discussed: these concern students developing technological literacy and lifelong learning skills. The second plot discusses the development of commodity markets in education (DETE (South Australia) 1999d; Commonwealth DETYA 2000a; The State of Queensland 2000) and the third plot concerns the use of the public funding to kick start the private digital technologies content market (cf SOCCI 2000).

Plot One: Human Capital Theory 
Preparing Students For The Digital Technologies Labour Market

It has been demonstrated throughout the thesis that the schooling sector digital technologies policies and budget statements are imbued with the importance of preparing students to take their place in the information
economy. For example, the whole of government Strategic Framework for the Information Economy states that ‘Australian States and Territories have recognised the importance of equipping students with information technology skills so they can work and participate in the information economy’ (Commonwealth of Australia NOIE 1998a: 11). Learning in an online world (EdNA 2000a) states that ‘all students will leave school with the employment-related skills needed in the information economy and an increased percentage will commence pathways to employment in the ICT industries’ (EdNA 2000a: 5). It is advocated therefore, that students be prepared for the digital technologies labour market through the development of generic and specific skills within subjects and across the curriculum, and through paying to complete specific industry accredited vocational credentials while at school, such as the Microsoft® Certified Systems Engineer and the Microsoft® Authorised Academic Training Program (cf Evans B. 1998). In addition (and as indicated earlier), the Australian Capital Territory and South Australia have commenced trials to accredit all year ten students with a basic level of competency in digital technology skills (cf Carnell 2000b; Government of South Australia 1999a).

The Executive Summary of the Commonwealth DEST (previously DETYA) policy Learning for the knowledge society. An education and training plan for the information economy (2000a) begins with an extract from the OECD publication A borderless world (1998), which states that ‘education is recognised by OECD member states as a fundamental key to wealth creation and competitiveness in the current global information economy’ (Commonwealth DETYA 2000a: 4). This policy continues stating that a priority area for action is ‘supplying the skills to drive the information economy’ (Commonwealth DETYA 2000a: 5), stating that ‘the education and training industry produces skilled people, creates knowledge, provides access for the community to the lifelong benefits of online learning and is an enabling force for all other industries’ (Commonwealth DETYA 2000a: 6). It further states that schools, along
with training institutions and universities can ensure that there are ‘adequate numbers of people with specialist skills needed for the information and communications technology (ICT) industries and other Australian industries to serve the needs of the economy’ (Commonwealth DETYA 2000a: 6). The commonwealth is clearly allocating economic purposes to schooling.

Like the commonwealth, the states and territories schooling sector policies each indicate that preparing students for participation in the information economy is an important purpose of schooling. Education Queensland’s Queensland State Education 2010 (The State of Queensland 2000) policy indicates that ‘completing school or its equivalent adds value to the competitiveness of individuals and national and regional economies’ (The State of Queensland 2000: 7). One of the purposes of schooling identified in this policy is that ‘education contributes to the foundations for a skilled workforce confident in its ability to compete in future global markets’ (The State of Queensland 2000: 13), achieved with ‘the use and application of information technology’ (The State of Queensland 2000: 13). The Victorian DEET states that through improved access to and skill development in digital technologies and the fostering of innovation through the schooling system ‘Victorians [will] gain the knowledge and skills to participate successfully in the global economy’ (State of Victoria 2001a: 23).

A senior state bureaucrat discussed his views about the economic purposes allocated to schooling as part of this research.

There's a bit of a consensus, maybe even an unrealistic consensus at times, that information technology could be an important ingredient in our future. So there's that's sort of a belief. Now, I've got to say, that for the people that talk about that, they [politicians and chief executives] don't always realise the specific issues and the specific benefits for school education. There's a danger in fact that there's a simplistic idea that we will get kids, you know, on computers from
the age of five. By the time they pop out the other end they'll be very employable, and so forth. Now the issues are a bit more complex than that. But I think that's broadly, I think how we got to where we are (QR 1 December 1999: lines 43-52).

It is evident then that preparing students for the digital technologies labour market is one of the plots that contributes to the economic narrative. Two subplots within the human capital theory plot are the contribution that learning to use digital technologies makes to developing lifelong learning skills, and the development of technological literacy skills in students. These skills are presented as being central to participating in Australian society and in the economy in the 21st century.

The commonwealth and all states and territories have identified that technological literacy and developing the skills of lifelong learning in students are important. The commonwealth indicates that schooling should ensure that

all citizens possess broad literacy, numeracy and technological literacy skills for life, work and lifelong learning and that there are adequate numbers of people with the specialist skills needed by the ICT industries and other Australian industries to service the needs of the economy (Commonwealth DETYA 2000a: 8).

The Queensland policy, Queensland State Education 2010 states that the transition to the ‘knowledge economy’ requires ‘building new skills needed for work and a social life in the information age, providing a foundation for lifelong learning in formal and informal settings’ (The State of Queensland 2000: 12). The ability to use digital technologies and the skills required for lifelong learning are therefore linked together in the policies and budget texts. Within these documents the economic purposes for developing these skills is provided as one of the justifications for advocating the widespread use of digital technologies in schooling. While the language used in the policies and budget texts emphasise the
importance of lifelong learning, neither lifelong learning nor technological literacy were raised in the research conversations.

Subplot one: lifelong learning

Learning in an online world (EdNA 2000a) indicates that ‘all students will have access to educational programs that provide a technology-rich experience and environment for developing the required skills and attitudes for lifelong learning’ (EdNA 2000a: 5). One of the South Australian government outcomes identified for the schooling sector is lifelong learning and one of the strategies identified to achieve this is to be ‘IT Smart’ (DETE (South Australia) 2000b: 5). The economic purpose of lifelong learning is identified in the Tasmanian policy Learning Together (20001e) which states that ‘the concept of lifelong learning needs to become embedded from an early age, so that young people view learning as a way to improve job opportunities’ (Department of Education (Tasmania) 2001e: 5). Lifelong learning here is conceptualised as being located on the supply side in an economic paradigm; as a way of improving students’ employability.

Lifelong learning was defined in a 1994 commissioned report by the (then) National Board of Employment, Education and Training (NBEET). The definition used in this report drew upon a UNESCO definition of education prepared in the late 1970’s. This definition in part stated that lifelong learning was ‘learning throughout life that leads to the systematic acquisition, renewal, upgrading and completion of knowledge, skills and attitudes made necessary by the constantly changing conditions in which people live’ (Candy, Crebert and O’Leary 1994: 17). Lepani (1995) defined lifelong learning as being ‘continuous across the lifecycle to facilitate flexible career paths and enhance personal development’ (Lepani 1995: 9). Yapp (1999) adds two additional concepts to the concept of lifelong learning: ‘lifewide’ and ‘lifedeep’ learning. He states that

I use lifelong learning to focus on the skills and attitudes needed for economic life, for employability. I use lifewide learning to cover
education for citizenship, for family, community and sense of self. Lifedeep learning is more for the spiritual aspects of human existence and for building bridges with other cultures and creeds. Learning for peace and cooperation falls into this part of learning (Yapp 1999: 370).

These definitions acknowledge the economic purposes allocated to lifelong learning but view lifelong learning more broadly than simply having an economic function.

The commonwealth however, has identified economic purposes as the main driver for the advocacy of lifelong learning (cf Commonwealth DETYA 2001). They indicate that one justification for lifelong learning is the ‘unpredictability and rapidity of change demanding new learning and renewal of competence’ (Commonwealth DETYA 2001: 2). This harks back to reflecting a sense of a lack of control or technological determinism, and perhaps even technological fatalism about the changes occurring around us. What can be seen though, is that much of the language within the texts links lifelong learning with the economic requirements of Australia, rather than focussing upon what Yapp (1999) has identified here as purposes for ‘lifedeep’ learning.

Subplot two: technological literacy

Technological literacy is being allocated a status in policies and budget texts similar to that of literacy and numeracy. This was reflected in the extract provided earlier from the policy, Learning for the knowledge society. An education and training action plan for the information economy (Commonwealth DETYA 2000a). Learning in an online world (EdNA 2000a) indicates that ‘information and technological literacy are now essential pre-requisites to work in almost any career’ (EdNA 2000a: 5). A difficulty with the phrase ‘technological literacy’ is that it can have different meanings in the policies and budget texts. One meaning refers to the technical capability of using the technologies. ‘Technological literacy’ however, along with ‘information literacy’, are used to describe how
digital technologies can be employed to interpret and understand information. Furthermore, Lankshear et al (1997) indicate that there can be an advocacy for both sophisticated or ‘higher order’ intentions to the use of the phrase, but that it can also have a ‘back to basics’ emphasis.

The ‘back to basics’ flavour has predominated in the schooling sector digital technologies policies and budget texts reviewed in this study, with the South Australia ‘whole of government’ policy Information Economy 2002 characterising this as follows.

One of the great contemporary challenges is equipping students … for life-long learning through effective use of information technology and online services. With the advent of the Information Economy, “IT literacy” is becoming the “4th R” of the basic competencies every individual needs (State Government of South Australia 2000: 44).

Consistent with this view, and as indicated in Section One of this chapter, South Australia and the Australian Capital Territory have begun to assess students' competencies in using digital technologies. As indicated earlier, these assessments are conducted to ascertain the most basic skills required to use digital technologies, and include competencies such as being able to turn a computer on and off and recognising the icons on a desktop (cf Australian Capital Territory DECS 2001a; DETE (South Australia) 2001a).

Another interpretation of ‘technological literacy’ brings into focus the way literacy, technology and learning interact with each other. Tinkler, Lepani and Mitchell (1996) indicate the use of digital technologies requires a new form of literacy. They define ‘information literacy’ as ‘the ability of students to use information and information technologies effectively to find, select and effectively use information to create knowledge and insight’ (Tinkler, Lepani and Mitchell 1995: xiii). Lankshear et al (1997) make a similar point in Digital Rhetorics. The direction taken in that study and reported in their three volume report advocated that the ‘operational’, ‘cultural’ and ‘critical’ dimensions of literacy and technologies should
underpin activities in schools. This was a similar approach to that used later by Bigum and Kenway (1998) and summarised in Chapter One. Lankshear et al (1997) indicate in their report however, that the critical dimension is under-developed in policy documents.

The Queensland Government seems to have taken heed of such finding, as their policy Queensland State Education 2010 states that students will be developing

> an ability and desire to learn based on critical thinking and independent action – a foundation for lifelong learning in both formal and informal ways and the pursuit of aesthetic, artistic, scientific and social discovery (The State of Queensland 2000: 12, emphasis in the original).

Teaching students to be able to take a critical view about the use digital technologies however, was not found to be consistent in the policies or budget texts authored by the states, territories or the commonwealth. Where policies identify that students will develop critical thinking skills, the challenge is then to see that translated into action. This represents a challenge for the future meaning of public schooling in the 21st century.

**Plot Two: Commodity Markets In Education**

The advocacy of the ubiquitous use of digital technologies in schooling in policies and budget texts is seeing commodity markets and schooling becoming linked. As indicated already, simply to advocate the universal use of digital technologies in schooling requires ubiquitous access to computer hardware and software, and the use of the Internet requires the use of telecommunications services. These material goods require purchasing from vendors, who are mostly located in the private sector. This constructs schools and the students who attend them, into large potential markets for the purchase of these various commodities. This was acknowledged in a briefing paper provided to the Ministers of Education and Chief Executives of the school education systems in December 2000 which stated that
the online global economy is in the midst of major changes as a result of which we are likely to see in education:

- alliances and aggregations of publishing, media, telecommunications, software and Internet industries into new bundled services with significant purchasing and distribution power;
- large corporations seeking market share in Australian online education; and
- increasing consumer interest in online educational products and services (Curriculum Corporation 2000b: 1).

Kenway et al (1994) observed such developments during the 1990’s stating that digital technologies ‘are becoming integral to the targeting and marketing projects of those who wish to cultivate consumers through schools’ (Kenway et al 1994: 322). They went on to suggest that ‘this has led to one particular manifestation of the market – a relatively new triad consisting of education, markets and information technology’ (Kenway et al 1994: 322). They saw this emerging ‘market triad’ as problematic, suggesting that educational democracy is being redefined ‘as consumer democracy in the education “industry”. Investors are encouraged to see education as a site worth cultivating for various sorts of profit, and consumers are encouraged to seek the competitive edge’ (Kenway et al 1994: 321-322). Markets however are not neutral where the buyers’ choice is unfettered. Advertising and branding of products (for example) are deliberately used to influence buyers’ choices.

In addition to schools being considered as markets, so too homes are also being considered as commodity markets for digital technologies goods and services for educational use. As Marginson (1997) has observed, ‘computing and telecommunications enable the home to be linked with other educational sites. A new and lucrative consumer market in educational technologies and software has developed’ (Marginson 1997: 34). It would appear however, that constructing schools as marketplaces is
not a new idea. James Rorty made the following observation in 1934: ‘a
democratic system of education … is one of the surest ways of creating
and greatly extending markets for goods of all kinds and especially those
goods in which fashion may play a part’ (Rorty 1934 in Klein: 2001: 87).
Or in Gramscian terms, hegemony is exercised through the great majority
of people compliantly accepting the necessity of the goods on offer.

Language of commodity markets
The commonsense language of commodity markets is pervasive. For
example, in justifying that public school education is important, the
Queensland State Education 2010 policy states that ‘the role of government
in an informed market is to maintain a strong system [of education], so that
the value of choice really exists’ (The State of Queensland 2000: 13). The
following recommendation made in a briefing paper prepared for CESCEO
in October 2000, also demonstrates the use of ‘market’ language.

CESCEO [the conference of education systems chief executive
officers] should commission initial market research to profile
online content user groups within the schooling sector (ie identify
segments within the teacher market) and identify what product
characteristics and market messages might motivate them (SOCCI
2000: 3).

In this case teachers as a cohort are conceptualised as a market that
requires stimulation by finding the motivating factors for them to use
digital online content.

If the schooling sector is constructed as a market, then it is an easy step to
consider those within the market as consumers or as customers. The
following extract from the South Australian Strategic Plan July 2000 - June
2003 states, ‘our customers are children and students, parents and carers,
trainees and apprentices, individual businesses, enterprises and employers’
(DETE (South Australia) 2000b: 3). Constructing students and parents as
customers or consumers, as Marginson (1997) points out, means that at
least one of the characteristics of a market must be present, noting that a
market is not a ‘thing’ but a behavioural construction. He argues that market production in education has five characteristics: ‘individualised commodities; a defined field; relations of monetary exchange, producer competition, and market appropriate behaviours’ (Marginson 1997: 29). Since markets are associated with unequal power relations, constructing students and parents within education markets is most likely to place them into subordinate positions of power.

Kenway et al (1994) assert that the powerful social and political groupings of the State and markets have reshaped public and political opinion. Kenway et al (1994) indicate that Pusey (1992) sees this as consistent with other economic rationalist directions within the public sector, and that Yeatman (1990) identifies this as consistent with the increases in corporate managerialism. Simon Marginson (1993) sees such reshaping in terms of the emerging market forms in the public service. Those companies with dominance in the school education marketplace however, are not anonymous.

In Australia the overwhelming majority of computer hardware and software used in schools, is made by companies that are owned by interests located overseas. This means that the profits made from the sale of these commodities, (bought with public money) are not directed into Australian owned enterprises, but instead go to transnational and multinational companies such as Microsoft® Corporation, IBM, Apple, Intel, Electronic Data Services (EDS) and Sun Microsystems. The following extract illustrates this relationship with the corporate sector. ‘Both Apple Macintosh and IBM compatible platforms are supported for curriculum use; IBM compatibles are mandated for administration’ (DETE (South Australia) 1999c: 7). Mandating the use of certain pieces of hardware for certain purposes reinforces the tradition of a centralised view of policy development currently occurring in the schooling sector. This centralised policy development model is set alongside the economic ability to leverage with the private sector.
Negotiating with the private sector

There is a dilemma and a paradox with which senior bureaucrats are operating. While there is ‘increasing devolution of decision making to schools’ (EdNA 2000a: 6), so too negotiating arrangements with software and hardware vendors is more rational and cost effective at a state or territory level, than it is at a local school level. For example, every state and the Australian Capital Territory have a ‘whole of department’ licence for the use of a suite of Microsoft® products. This is discussed further in the next chapter.

Negotiating ‘whole of department’ and in some cases ‘whole of government’ contracts have also been undertaken for telecommunication services and for other infrastructure requirements, as is the case in South Australia. This state has a ‘whole of government’ contract with the US company EDS. A $565 million, nine year contract to provide digital technologies services to the South Australian State Government was signed in October 1995. It was the first time in the world that such services had been contracted out on a ‘whole of government’ basis. An advertising feature describes this arrangement as follows.

Virtually all of South Australia’s public sector computing systems have been handed over to EDS. This included the computers inside the State’s schools, prisons, hospitals, motor registration offices, courts, police stations and government departments from social welfare to agriculture. As a result, EDS is now managing the computer infrastructure of more than 1000 Government locations around South Australia. The intention was to attract one of the world’s biggest computer companies to South Australia, which would kick-start, the information technology industry in South Australia. (EDS Advertising Feature, March 14 1999: 130-131)

Such contracts come with requirements that are not negotiable at the local school level, and so while devolution of decision making is being actively encouraged by the states and territories, there are some decisions over
which schools at a local level (let alone individual parent and students), have no control.

Product branding
A strategy used in constructing schooling sector markets is the product branding that occurs with the use of digital technologies. This is also pervasive. Both Michael Apple (2001) and Naomi Klein (2001) have recently published books which include sections on product branding and schooling, particularly in the United States and Canada. They indicate that in those countries the product branding of goods and services provided to schools is a deliberate part of the marketing to students, parents and teachers. In Australia, sponsorship deals between schools and private companies are a part of the way both public and private schools are able to attract additional funding to the school. This is particularly so for the supply of digital technologies goods and services. Invariably such deals involve the display of company logos in a prominent place within the school. These logos are often placed in the front foyers of schools as they are a point of pride for the school: in the competition for the corporate dollar this school has been successful against others in the local area, in gaining sponsorship either in money or goods and services from a private company.

The use of product branding also occurs in schools through (for example), simply turning on a computer and waiting for the operating system to begin working. Doing this probably means that the user is exposed to the Microsoft® Corporation branding; arguably, almost subliminally. It is a potent mix of State and private sector policies however, which sees schooling as compulsory between the ages of six and fifteen or sixteen, and at the same time these students are viewed as potential markets.

Plot Three: Industry Development
Kick-Starting The Digital Technologies (that is the ICT) Industry Sector
The final plot to be discussed here as contributing to the economic narrative is using the public schooling sector to kick-start the private
digital technologies (or ICT) industry sector. In this model funding is identified to help stimulate and develop a marketplace for Australian online curriculum content.

Digital technologies and the emerging interest of large corporations in online networks may support the supply of online content in Australia if assisted by the judicious and strategic investment by government and industry (Curriculum Corporation 2000b: 7).

This is proposed to ‘give the nation the opportunity to establish a leadership role and an export market in digital curriculum resources’ (Curriculum Corporation 2000b: 7). Furthermore this document argues that ‘content development is another area in which Australia can carve a firm competitive niche for itself in the information economy’ (Curriculum Corporation 2000b: 7). This industry development model sees the use of public funds for the development of Australian schools’ online content by stimulating a market to supply that content to schools. This is another model however, that places school communities as consumers of goods provided by a market, but in this case the market is being deliberately constructed by government agencies actively working with private corporations to establish it.

As indicated earlier, the report Delivering the Promise prepared by the company Trinitas (2000), on behalf of the Curriculum Corporation, and submitted to the cabinet of the federal government, became the basis for the funding made available through Backing Australia’s Ability (Commonwealth of Australia 2001a) for the establishment of the Le@rning Federation (SOCCI) project. This Trinitas report has as its subheading, ‘the case for rapidly expanding the digital curriculum resources available for Australian classrooms and for developing the digital content industry’ (Trinitas 2000: front cover). A subsequent document prepared by the Le@rning Federation (SOCCI) Project Director indicates the intention of the SOCCI, as follows:

to generate, through a national, collaborative, coordinated program, high quality researched and evaluated online curriculum content for
Australian schools, reducing potential duplication, increasing cost efficiencies, whilst stimulating the market and private investment in development (Dellit 2000: 1).

Part of the rationale identified for using funds intended for the public schooling sector to stimulate the digital content industry is to produce materials of relevance to Australian students. Delivering the Promise states that unless Australia develops its own digital curriculum content, others will fill the void. We will face the prospect of becoming consumers of other people’s material rather than providers of our own. The risk is that content developed elsewhere will lack relevance to Australian students and the curriculums (sic) set by the Australian States and Territories, and leave us hostage to values and standards that are not our own. On the other hand, by developing our own content we stand to create a new ground-breaking industry in this country, as well as servicing our distinctive educational needs (Trinitas 2000: Executive Summary).

This report continues recommending that ‘all Australian Governments commit themselves to … working with the private sector to … help establish the market framework the new digital content industry will need’ (Trinitas 2000: Executive Summary). All states and territories have committed themselves to the Le@rning Federation (SOCCI) project with the peak Steering Committee comprising four public schooling sector state and territory chief executives. This Steering Committee has as their first of four terms of reference, to ensure that ‘a robust and coherent framework for the Australian school online content market is established’ (SOCCI 2001a: 1). To meet this term of reference the management strategy for the Steering Committee includes developing ‘a business plan for a sustainable online content market, including deliverables for a public kick-start strategy, for consideration by MCEETYA’ (SOCCI 2001a: 2).
To pause for a brief interlude, the question of developing online materials to help to reinforce views of Australia’s identity is an important one not to be overlooked. Albeit that there is plenty of room for research concerning this, it has not been the purpose of this thesis to undertake a study concerning ‘identity’. Rather the immediate focus here is the use of the public schooling sector as part of a digital technologies curriculum content industry development strategy. The role of digital technologies in schooling, and the cultural question of maintaining an Australian identity is one requiring research.

The Le@arning Federation SOCCI project is at the beginning of its life and as such it is difficult to predict the demand for online content within the public schooling sector. An immediate difficulty with which the project is wrestling however, is developing intellectual property arrangements in such an environment, not only with the private sector but also between each of the respective states and territories jurisdictions. Irrespective of the issues which arise though, it is clear that a schooling sector initiative is also being used as an industry development strategy for the private digital content market, and this is a recently emerging development in the ‘markets in education’ debate. It is intended that the private digital content market will become self-sustaining (SOCCI 2000), but it is difficult at this stage to see how this industry development strategy will be sustained without public funding, since private sector sustainability requires that private companies make profits from their developments. This raises a question concerning what constitutes public schooling in the 21st century? Here it seems, it is being constructed as a market where profits are to be made.

In Summary
In drawing the discussion about the economic narrative to a close then, the relationships drawn between the role of public schooling, international competitiveness within globalised economies, the markets and digital technologies, have been demonstrated in commonwealth, state and territory public school education policies and budget texts. Presently, school
education has purposes that include enhancing the economy. That is, school education is being expected to change in line with international economic and technological trends. A risk of providing economic models as the basis for relationships within the schooling sector however, means that there is the possibility that such relationships (consciously or unconsciously) will be reproduced within the day to day administration and operations of schooling systems, in schools, in teaching and learning, and in the narratives used to describe such relationships. That is, markets in public schooling have become commonsense (cf Gramsci 1971), and by commercialising such relationships, there are dangers which include an end to the good will of those working in the public schooling sector (cf CC 18 August 1999; EW 27 October 1999). Furthermore, reflecting on the question ‘what does public schooling mean in Australia in the 21st century, with its past tradition of free, compulsory and secular schooling, and given the present public schooling sector policies urging the ubiquitous use of digital technologies?’, a reaffirmation of the secular part of the phrase ‘free, compulsory and secular’ may be required, with a change of emphasis concerning ‘secular’ education. Instead of a non-religious education being of concern for the democratic purposes of education (cf Marginson 1998), a non-commercial secular education may be what is required in the future.

In comparison to the policies and budget texts, the economic purposes of schooling were not revealed to be such a dominant narrative in the research conversations. Instead, while acknowledging the economic forces at play, the educational purposes of schooling that could be achieved with the use of digital technologies were of more concern to the participants in this study. That is, it was recognised that the economic narrative included some educational purposes of schooling but for those working in the public schooling sector that participated in this study, (including those in the most senior bureaucratic levels of government), the economic narrative was not accorded as much attention as the education narrative. Therefore having outlined this economic narrative, let us now turn to look at the education narrative and its plots that have emerged from this research.
Education Narrative

To interpret and understand this ‘education narrative’, firstly the language used, and in particular, the phases ‘learning technologies’ and ‘mainstream education’ are discussed. The curriculum contexts within which the digital technologies policies are located, are then considered. Four plots and their subplots are subsequently debated. The first plot focuses upon students’ learning. This plot asserts that there will be an improvement in students’ learning outcomes and the raising of educational standards afforded through the introduction of digital technologies into schools. A subplot raised here is the assertion that through the use of digital technologies there will be an improvement in the quality of teaching and learning provided. The second plot focuses upon adult learning. This plot and its subplot advocate for the application of the concepts of learning organisations and continuous improvement to public schooling. The third plot and its subplots address the processes of teaching and learning using digital technologies. The use of email, online content and the role of the teacher using digital technologies for teaching and learning purposes, are explored. Since the possibilities for the convergence of ‘face to face’ schooling and distance education are being canvassed, the final plot concerns the changing distinctions made between these two styles of schooling.

Learning Technologies

Within the language used in this education narrative a phrase that has been extensively employed is ‘learning technologies’. The use of this phrase is indicative of the thinking about the use of digital technologies in schooling. The phrase ‘learning technologies’ tends to be used in policy texts to describe the use of computers combined with telecommunications and at times networked configurations (cf EdNA 2000a). Each state and territory has trod a similar policy path moving from using the phrase ‘computers in curriculum policies’ where the emphasis was on teaching ‘computers’ as a subject (cf Education Department of South Australia 1987; Education Queensland 1999a), to ‘learning technologies’.
Looking briefly at the changes in the language, in the beginning, computers were in some schools with the aim of teaching ‘computers’ as a subject. The emphasis in the language was on the technology. There was not a view of integrating their use across the wider curriculum. For example, in 1982 Peter Sandery noted that ‘computers have been used in education since the early 1960’s and yet a spot check on the average Australian classroom would reveal little evidence of their existence in the school system’ (Sandery 1982: 1). Since the early 1980’s the costs of computers have fallen, and their functionality has increased. The capacity of computers to combine the use of video, photographs, sound, and animations in presentations; with the ability to access a wide range of information in a digital format; and to use software such as shareware and email for communication purposes, has seen the role of computers in schooling extended and attract the name ‘learning technologies’. This emphasis has now moved towards ‘learning technologies policies’ where the intention is to use digital technologies incorporated into the teaching and learning processes, ultimately across all subject areas.

In a Victorian paper ‘learning technology’ is defined as follows.

If we think of technology as “the applied science of…”, then **information technology** is application of the science of information systems and results in the development of tools for managing information. **Learning technology**, on the other hand, is the applied science of learning. It is the application of all that we know about human learning to develop strategies and tools for enhancing and managing learning (Atkin 1998: 6, author’s emphases).

It is interesting here that in defining the phrase ‘learning technology’ there is an appeal to the scientific. This is reminiscent of the point raised in Chapter Two, indicating that there has been an attempt to establish ‘education’ as a legitimate discipline, grounded upon a scientific base (Giroux 1981). Furthermore, this definition provided by Aitkin (1998) sees the location of digital technologies as part of teaching and learning.
practices. This raises de facto the important place teachers have in educating students to use digital technologies, as part of their learning strategies. This however has not been overtly stated within the policy texts.

The language change in the policies and budget texts, from computers as the content of a course offering, to ‘computers in teaching and learning’ can be used as a signpost in how, in the development of policies, there has been a change of thinking in those developing the policies. Organisationally the changes of policy language reflects a change of view from teaching ‘computing’ as a subject probably located in a computer laboratory, to incorporating computers into students’ day to day learning activities across a variety of curriculum areas. This is a more complex process than simply focusing on the technology itself, or just the course to be taught. It is the pre-figuring of a complex story of change.

While the use of the phrase ‘learning technologies’ is prominent in the policies and budget texts, the use of such language did not feature in the research conversations. Out of all the hours of conversation the only person to use the terminology was one state based political operative. All the other participants identified each piece of technology by name when discussing it. That is, they plainly referred to ‘computers’ or ‘the Internet’ or to ‘local area networks’ (LAN’s). The absence of the use of the phrase in professional discussions would suggest it has not become embedded into the language of those in school communities. Given the different technologies that constitute ‘learning technologies’, to refer to each piece of equipment individually and as required provides more clarity of intention.

**Juxtaposing ‘Mainstream Education’ And Distance Education Schooling**

Within the language used in the research conversations, ‘face to face’ schooling was described as ‘mainstream’ education. In these conversations, distance education was juxtaposed with ‘face to face’ schooling. Participants in this research including students and parents, compared
distance education to ‘mainstream’ schooling, specifically using the term ‘mainstream’. This positioning of distance education in juxtaposition to ‘face to face’ schooling occurred in the research conversations when discussions were referring to teaching strategies or methodologies, and to how schooling is organised systemically.

The simple act of referring to ‘face to face’ schooling as ‘mainstream’ constructs distance education as something different, and in the past this has tended to equate to, or to be thought of as inferior. This is reflected in the 1984 background statement made in a report to the South Australian Senior Executive of the Education Department.

Historically, Distance Education has developed for pragmatic reasons and is generally based on a deficit theory of education. The clients are generally outside mainstream education and, therefore it is argued, require compensatory programmes to meet the imbalance (South Australian Education Department 1984: 4).

A distance education principal drew the distinction between distance and ‘face to face’ teaching by highlighting the extent of planning required for developing distance education courses, particularly in an online environment.

Kids need to know from day one what the whole course involves, and you can’t do what I’ve done as a “face to face” teacher and walk down the corridor, take the painting off the wall and go in and tell the kids to look at the painting and say, “now I want you to write 200 words about your first reaction to that”. You can’t operate like that, right? (AZ 26 July 1999: lines 221-227).

A senior officer within one of the distance education schools observed that ‘it's a bit like once you come into distance education, then you're completely different than the mainstream school’ (BB 16 March 2000: lines 371-373). He went on to talk about the teaching and learning methodologies used in distance education schools, but expressed the
frustration he felt about how non-distance education teachers and bureaucrats at times viewed in a critical manner those working in distance education. He stated that ‘sometimes that also means that people seem to think that you also threw out some of the principles of good teaching and learning practice’ (BB 16 March 2000: lines 375-376).

The difficulty of taking a superior or disdainful view of the work of others in a public education system, (and in this case the specialist distance education teachers), is that it can get in the way of being able to learn from their experiences. If the experiences of those specialists working in distance education are not valued for what they can offer as early adopters of using technology-mediated teaching and learning methods, then frustrations can grow as the distance education specialists watch those in ‘face to face’ schooling make the mistakes, where the lessons have already been learnt by those specialist school level distance educators.

At a systemic level, one chief executive officer observed this lack of exchange of information between ‘mainstream’ and distance educators working with digital technologies. He stated that

by and large there’s a relatively separate bureaucratic and management structure around distance education, that it operates according to its own cycles and concerns. And that mostly, I mean, we find it really difficult to talk, we’re talking at the moment to systems about digital materials, curriculum materials. You have to have two conversations, because the curriculum people in the systems, are just different people. And they don't talk to each other (GH 15 July 1999: lines 40-46).

While distance education and ‘face to face’ schooling has tended to operate separately from each other, with the increasing advocacy for the use of digital technologies, paradoxically, there exists the potential to converge both styles of teaching and learning. This will be discussed later in this chapter.
Curriculum Contexts And Digital Technologies Policies

The contexts within which the policies advocating the use of digital technologies in schools sees discussions that take in what is intentionally to be taught in schools, and what is not intentionally taught in schools but nonetheless is conveyed, and usually is referred to as the ‘hidden curriculum’. This research has been concerned with articulated policies and budget texts and as such this study has not directly addressed issues concerning the ‘hidden curriculum’. Incorporating digital technologies into schooling and the implications this has for the ‘hidden curriculum’ however represents a space for further research.

The specification of curriculum through policies operates at a variety of levels in Australian schooling. Each state and territory sets out the nature of the curriculum that will be offered in their schools, through the education departments and other public authorities. In New South Wales and Western Australia, the school curriculum authorities are separate to their respective education departments. These authorities have responsibility for specifying the curriculum to be taught from reception (or entry) into school, through all the years of schooling, until students complete their final years of schooling (cf Curriculum Council of Western Australia 2001; The Board of Studies New South Wales 2001). Queensland has two curriculum authorities: the P-10 curriculum is managed through the Queensland School Curriculum Council; and the curriculum for the final two years of schooling is managed by the Queensland Board of Senior Secondary School Studies (Queensland Board of Senior Secondary School Studies 2001). It is anticipated that from July 2002 that these two authorities will be amalgamated into one statutory authority, to be called the Queensland Studies Authority. In the remaining states and territories separate curriculum authorities have responsibility for stipulating the curriculum and assessment requirements for the final years of schooling only (cf Australian Capital Territory Board of Senior Secondary Studies 2000-2001; Senior Secondary Assessment Board of South Australia 2001; Tasmanian Secondary Assessment Board 2001; The Northern Territory Board of Studies 2001; Victorian Curriculum and
Assessment Authority 2001). As has been demonstrated earlier in this chapter however, all public schooling systems have digital technologies policies which include implications for what is taught in public schools and how it is taught. Along with the National Goals of Schooling, these policies are the ones of interest here (and were summarised in Appendices One and Two).

National goals of schooling
At a national level, in 1999 the commonwealth, state and territory Ministers of Education agreed to The National Goals of Schooling in the 21st Century. These goals were developed with the intention that they would provide both curriculum direction to school education authorities and form a basis upon which national reporting of educational outcomes could be achieved (Commonwealth DETYA 1999). These goals reflect the involvement of ministers in the setting of curriculum priorities and have as one of their functions to ‘steer at a distance’ (to use Kickert’s (1991) phrase adopted by Lingard (1996)). This approach of ‘steering at a distance’ uses the goals as a basis against which to test and report students’ performance.

Achievement of these national goals is intended to increase ‘public confidence in school education through explicit and defensible standards that guide improvement in students’ levels of educational achievement and through which the effectiveness, efficiency and equity of schooling can be measured and evaluated’ (Commonwealth DETYA 1999: 2). The purposes for setting in train processes to undertake such testing is said to be to ‘provide a basis for investment in schooling to enable all young people to engage effectively with an increasingly complex world’ (Commonwealth DETYA 1999: 2).

Beyond the advocacy for the social and economic purposes of schooling in a globalised world, lifelong learning is seen as important to underpin the National Goals.
The achievement of the national goals for schooling will assist young people to contribute to Australia's social, cultural and economic development in local and global contexts. Their achievement will also assist young people to develop a disposition towards learning throughout their lives (Commonwealth DETYA 1999: 2).

Lifelong learning is discussed further shortly, however, since subsequent policies at the commonwealth and national levels, have taken the National Goals into account (cf Commonwealth DETYA 2000a; EdNA 2000a; SOCCI 2000). Also of contextual relevance to the incorporation of digital technologies into the curriculum by the respective public schooling sectors, are the following specific goals.

1. Schooling should develop fully the talents and capacities of all students. In particular, when students leave school, they should: …

   1.5 have employment related skills and an understanding of the work environment, career options and pathways as a foundation for, and positive attitudes towards, vocational education and training, further education, employment and life-long learning. …

   1.6 be confident, creative and productive users of new technologies, particularly information and communication technologies, and understand the impact of those technologies on society (Commonwealth DETYA 1999: 2).

While policies developed after the National Goals have taken these goals into account, this is not to suggest that the National Goals of Schooling have gone uncontested. Public policies that advocate using digital technologies in schooling bring together the social and cultural purposes of schooling, with the sites of contestation including the nature of the curriculum and the teaching and learning provided. In the research conversations conducted for this study, one state public schooling sector
chief executive indicated that the National Goals of Schooling were problematic in his state, as the following extract indicates.

Well my reading of the national scene is that David Kemp [(then) federal Minister of Education] has seriously misjudged a desirable future direction for schooling, and that the National Goals for Schooling which he supported are really vacuous, to not much use. We’ve just conducted an extensive consultation about the next 10 years of state schools; 700 meetings, 10,000 people across the state. The National Goals of Schooling got the thumbs down from teachers on the grounds that they didn’t actually say very much about schooling and where it should go. So that’s the first part. Also David Kemp would see the National Goals of Schooling as some sort of departure point for a lot of other things that might be done. If the departure point is itself wobbly, which I believe it is, then the things derived from it are also likely to be wobbly, as well. And that, the most recent debate around the table at MCEETYA in Adelaide proved to be the case. So the first point I’d make about the national scene is that David Kemp has a very shaky hold on the bases for developing a decent view of schooling in the years ahead. The second part of the national scene is the national benchmarks and testing against them which in turn are of course, related to the National Goals, but they pre-date the Adelaide Declaration. And there the approach is methodologically flawed, because of the testing, and are philosophically deficient as to the basic intentions behind the benchmarks, because it’s an attempt to take Australian schools down the American path, where it’s already apparent in America that the standards based approach has really had the affect of corrupting education, such that kids are focussed on too narrow a range of things, and parents are obsessed with whatever happens in the classroom on a day to day basis in many schools, [which] will somehow be able to be related to how their kids are going to go on the national/state tests, which they have to do at some point (CD 8 September 1999: lines 176-200).
This chief executive continued, to explain how the Honourable David Kemp achieved national agreements.

At the moment, the commonwealth Minister is extremely capable, full of resolution and determination, and is having some success but a lot of the state Ministers he’s dealing with are being brow beaten into decisions that they don’t really fully agree with and thus, implementation is likely at best to be very patchy (CD 8 September 1999: lines 224-227).

In the extract (above) the chief executive articulates the concerns some have for using goals or educational outcome statements along with standardised tests, to make judgements about students’ progress at school. These concerns can be applied to the testing of basic skills in using digital technologies employed in some states.

The intentions of the National Goals then provide a contextual basis, albeit contested, for benchmarking student outcomes nationally through testing conducted at the state and territory levels. One plot that has emerged from the policy and budget texts views digital technologies as a mechanism for raising the standards of student outcomes from schooling. It is this issue to which we will now turn.

**Plot One: Raising Standards And Improving Student Outcomes**

One of the curriculum plots that can be found within the education narrative in the digital technologies policies is the assertion that using digital technologies in schooling will improve student outcomes and raise the educational standards of public schooling. Queensland’s *Schooling 2001* policy serves to illustrate this. It has the stated aim ‘to improve students learning outcomes through the integration of computers in the curriculum and the bringing of world-wide information resources to Queensland State school classrooms’ (Education Queensland 1999b: 1). It goes on to identify five goals to achieve this. One goal relates to learning outcomes. It states its purpose is to ‘develop and apply assessment instruments and processes to determine the extent to which students...
improve their levels of achievement through the use of learning technology’ (Education Queensland 1999b: 1). A review of using digital technologies in schooling in Queensland was titled Application of new technologies to enhance learning outcomes for students (Education Queensland 1999a), and its major purpose was to determine a ‘compelling rationale for the use of new technologies to enhance learning outcomes for students’ (Education Queensland 1999a: 1).

Queensland has not been alone in advocating the use of digital technologies to improve student learning outcomes. In South Australia the Department of Education, Training and Employment Annual Report 1999 stated that ‘the department will use information technology (IT) to improve student learning’ (DETE (South Australia) 2000c: 22). The (then) Director General of Education in Western Australia indicated that through the ‘Learning Technologies Project’ that ‘integration of technology into the curriculum will provide improved student learning opportunities for all our students’ (Vardon 1998: 1). A Victorian paper has asserted that improved student learning outcomes can be achieved because ‘introducing learning technologies into the learning environment has been shown to make learning more student-centred, collaborative and encourages cooperative, creative problem solving’ (Kimber 1999: 4). At a national level the policy statement Learning in an online world (EdNA 2000a) indicates one of its key areas of action is ‘improved learning outcomes for students’ (EdNA 2000a: 3), and likewise at the commonwealth level a key area of action identified, also is ‘improved learning outcomes for students’ (Commonwealth DETYA 2000a: 37).

There is little question in any of these policy texts about whether digital technologies in themselves actually do improve student outcomes. Rather it is assumed that they do, and as such, the question requiring research within that paradigm becomes ‘how can digital technologies improve student learning outcomes?’ In the literature review undertaken by Bennett and Lockyer (1999) however, they state that
notable is the lack of research which reports on changes to learning outcomes as a result of technology implementation. While a few studies report changes in the way learners develop and present their ideas using computers, there is little evidence that indicates positive impacts on the student (Bennett and Lockyer 1999: 22).

Given the aforementioned assumptions about the role of digital technologies in learning though, a dilemma for schooling systems is how to determine and demonstrate improved learning outcomes by students from using digital technologies.

The assumption that digital technologies of themselves improve student learning outcomes is to take a technologically deterministic position allocating digital technologies powers outside of those within human control. That is, the language that says that ‘digital technologies will improve student learning outcomes’ sees a direct causal link made between the objects and the proposed outcomes from the use of those objects. Attempts to measure this hypothesis by (for example) disaggregating the influence exercised by digital technologies over students’ improved learning outcomes (or otherwise), then are required. This is a flawed approach. Attempting to prove that digital technologies improve student learning outcomes scientifically or quantitatively in standardised ways is difficult because of the extent of other factors such as teachers’ influences, and the use of other sorts of technologies in teaching and learning, such as books, or using a pen to write. Such factors are difficult if not impossible to control and therefore, to disaggregate and determine.

A related benefit of the proposed raising of the standard of student outcomes is said to be improvement of the state or territory’s economic outcomes. This is linked to the human capital theory plot and the economic purposes of schooling raised earlier in the economic narrative. It is argued that by making the student more competitive in the marketplace, the state or territory will also become more competitive in an economic environment (cf The State of Queensland 2000). It becomes apparent then,
that demonstrating improved student outcomes is important for the economic purposes of the State.

Subplot one: improving the quality of teaching and learning
Related to the plot of using digital technologies for improving students’ outcomes, is the subplot which claims that using digital technologies in schooling will improve the quality of teaching and learning available. The following statement serves to illustrate this. ‘The focus for technology in schools will be on continuing to develop high quality teaching and learning practices’ (DETE (South Australia): 1999c: 1). ‘The focus on the use of technology is to amplify, extend and transform learning’ (DETE (South Australia): 1999c: 9). While the role of the teacher is implicit in these statements there also seems to be the assumption that digital technologies in themselves, will lead to an improved quality of teaching and learning being provided within schools. The role of teachers in using digital technologies to contribute to improving the teaching and learning is minimalised. This then leads to comments such as the following made by a senior officer in distance education: ‘it’s an interesting clash of politics and pedagogy isn’t it? Because I think that politicians see online as the answer and that it means that we have to employ less teachers’ (BB 16 March 2000: lines 179-181).

While the digital technologies policies indicate that students’ quality of teaching and learning will be improved and the outcomes that they achieve through using digital technologies will improve, in this study it was found that the main use students made of computer hardware, software and digital networks was to word-process their assignments. ‘I have a computer which I mainly use for typing to do my work, it’s better than using a pencil’ (Student 3: March 20 2000: lines 3-4). Those in both the parent and student cohorts participating in this research used the language of publishing materials and indicated that for them this represented improvements to the students’ written work. The following statement made by a parent illustrates this.
They can do their word-processing, and polish and publish their work and make it at a standard which they’re happy with. They can keep mucking around with it until it is good enough. They use the grammar check and the spelling check to make sure that it does sound nicely (P2 20 March 2000: lines 74-78).

While the quality of the presentation of work adds to the satisfaction of students’ experience, it is unlikely that this benefit in itself justifies the costs associated with the advocated use of digital technologies in schooling. The capabilities of these machines certainly offer more than simply word-processing and publishing functions.

To achieve improved quality of teaching and learning, the ‘whole of department’ policies for the respective state and territory schooling sectors advocate the development of learning organisations using the strategy of ‘continuous improvement’. It is these concepts that now require interpretation and understanding.

**Plot Two: Learning Organisations And Continuous Improvement**

All states and territories identify as important establishing public schooling systems and schools as ‘learning organisations’ where there is ‘continuous improvement’ (cf DETE (South Australia) 2000b; New South Wales Department of Education and Training 2000a; The State of Queensland 2000). The use of digital technologies is identified as a key factor for achieving this. The following examples serve to illustrate these policy directions.

The South Australian education department states ‘our mission is to provide high quality learning, teaching, care, employment and youth services within an integrated, responsive and supportive learning organisation which strives for continuous improvement in service and performance’ (DETE (South Australia) 2000b: 1). One of the five strategic directions identified to achieve this is to be ‘IT Smart’ (DETE (South Australia) 2000b: 10). In Queensland, ‘quality schools will divest
themselves of traditional industrial age and bureaucratic restraints to reinvent as dynamic “learning organisations” in “learning communities”’’ (The State of Queensland 2000: 10). To achieve these outcomes, Queensland schools are developing as dynamic learning organisations in networked learning communities, flexible, innovative and responsive, focused on student learning and that work closely with parents and business; … all underpinned by excellence in the use and application of information technology (The State of Queensland 2000: 13).

The EDWA’s Plan for Government School Education 1998-2000 states that there is ‘an increasing dependence on electronic/digital forms of technology’ (EDWA 1997: context for planning), and that a trend to which the education department has to respond, is the ‘drive for continuous rethinking and improvement based on high quality learning’ (EDWA 1997: context for planning).

Organisationally therefore, within schools and schooling systems the advocacy for using digital technologies is framed in terms of their importance for the organisation to become a ‘learning organisation’ where ‘continuous improvement’ is required to achieve such an organisation. The policy extracts above demonstrate the extent of the commitment by the respective schooling systems to achieve these concepts. Therefore, while there is an emphasis upon students becoming lifelong learners, schools and departments are to become learning organisations with the employees practising continuous improvement.

In the policy texts, linked to the concept of ‘continuous improvement’ is the necessity for standards against which improvements can be measured. Given the consistent policy emphasis across the states and territories, consideration now follows of what the concepts of learning organisations and striving for continuous improvement may look like within the public schooling sector where using digital technologies are advocated in conjunction with achieving these policy directions.
The phrases of ‘learning organisation’ and ‘continuous improvement’ have
been adopted from business, human resource management, strategic
management and enterprise theories (cf Senge 1990; Mintzberg 1994).
Motivation for adopting the concept of a learning organisation has been
linked with the impact of various technologies on work and the advent of
the ‘knowledge’ or ‘information society’ (cf Field and Ford 1995; Lepani
1995; Tapscott 1996). Ellyard (1999) asserts that ‘it is recognised that both
individuals and organisations must learn continuously in order to adapt to
changing circumstances and to develop new skills and capabilities to thrive
in a rapidly changing world’ (Ellyard 1999: 64). The introduction of digital
technologies into the various education sectors’ workplaces therefore, is
one of the reasons why the concepts of continuous improvement within
learning organisations are advocated. Governments argue that in response
to the introduction of digital technologies teachers are required to develop
new skills and capabilities.

Although not the first author to write about the concept of a learning
organisation, Peter Senge’s (1990) book, The Fifth Discipline has been
central for articulating the thinking about it. Other authors overseas, such
as Garratt (1990), Jones and Hendry (1994) and Pedler, Burgoyne and
Boydell, (1997), and in Australia, Ellyard (1999), Field and Ford (1995),
and Sharratt and Field (1993) have also been pursuing these lines of
thinking. It is important to distinguish however between a learning
organisation and organisational learning.

Senge (1990) defines a ‘learning organisation’ as a place ‘where people
continually expand their capacity to create the results they truly desire,
where new and expansive patterns of thinking are nurtured, where
collective aspiration is set free, and where people are continually learning
how to learn together’ (Senge 1990: 1). He believes that a learning
organisation is one that is ‘continually expanding its capacity to create its
future’ (Senge 1990: 14). Sharratt and Field (1993) make the distinction
between a learning organisation and organisational learning by stating that they view a learning organisation as an ‘idealized goal, and organizational learning as the process of pursuing this goal’ (Sharratt and Field 1993: 130). Leithwood and Aitken’s (1995) definition of organisational learning indicates that it is central to the concept of a learning organisation. They define ‘organisational learning’ as

a group of people pursuing common purposes (and individual purposes as well) with a collective commitment to regularly weighing the value of those purposes, modifying them when that makes sense, and continuously developing more effective and efficient ways of accomplishing these purposes (Leithwood and Aitken 1995: 41).

Tapscott (1996) asserts that in relation to companies, for them ‘to be successful in a knowledge economy, firms need to overcome their organizational disabilities and create learning organizations [where] organizational learning occurs within teams’ (Tapscott 1996: 202). In considering the processes required to achieve organisational learning within learning organisations, Mulford (1998) suggests that organisational learning can be thought of metaphorically as a journey rather than a destination.

Senge (1990) posits that there are five ‘learning principles’ upon which learning organisations should be based: systems thinking, personal mastery, mental models, shared vision and team learning (Senge 1990: 6-10). Senge (1990) defines ‘systems thinking’ as ‘a conceptual framework, a body of knowledge and tools that has been developed over the past fifty years, to make the full patterns clearer, and to help us see how to change them effectively’ (Senge 1990: 7). He defines ‘personal mastery’ as ‘the discipline of continually clarifying and deepening our personal vision, of focusing our energies, of developing patience, and of seeing reality objectively’ (Senge 1990: 7). Senge describes personal mastery as ‘the learning organization’s spiritual foundation’ (Senge 1990: 7), referring to the link between personal and organisational learning. Senge (1990)
conceives of mental models as being ‘deeply ingrained assumptions, generalizations, or even pictures or images that influence how we understand the world and how we take action’ (Senge 1990: 8). He describes the importance of building a shared vision as ‘the capacity to hold a shared picture of the future we seek to create’ (Senge 1990: 9). He describes team learning as ‘the capacity of members of a team to suspend assumptions and enter into a genuine “thinking together”’ (Senge 1990: 10). Senge (1990) defines the fifth discipline as ‘systems thinking’; ‘it is the discipline that integrates the disciplines fusing them into a coherent body of theory and practice’ (Senge 1990: 11). Senge (1990) argues that ‘at the heart of a learning organization is a shift of mind – from seeing ourselves as separate from the world to connected to the world’ (Senge 1990: 12).

Bradley Jackson (2000) argues however that the concept of a learning organisation is one only of rhetoric and that Senge has been an important ‘sanctioning agent’ or a ‘hero’ who has legitimated the concept of the learning organisation. Drawing on his previous work Jackson (2000) suggests that popular management fashions such as excellence, total quality management, reengineering, and the learning organization that have recently gripped the corporate imagination can be fruitfully conceptualized as rhetorical visions in terms of their form and the function they fulfil for managers and organizations (Jackson, B. 2000: 195).

Ellyard (1999) makes a similar point concerning the rhetorical use of language stating, “life-long learning” and “organisational learning” have become buzzwords in the 1990’s’ (Ellyard 1999: 64). The respective Australian schooling sectors nonetheless have adopted the rhetoric of these concepts and have linked into them the necessity for standardised measurements to determine the levels of continuous improvement.
Organisationally then, the driving forces sitting behind the narrative which sees schooling sector policies advocating continuous improvement within learning organisations can be seen to be consistent with the plots outlined as comprising the economic narrative. Here the economic paradigm is applied to the organisational parameters of managing a public schooling system. In turn, this is consistent with the business management approach which underpins the theories of learning organisations, organisational learning and continuous improvement.

Subplot one:
Schools, schooling systems, learning organisations and continuous improvement
Within the policy and budget texts there is a subplot that proposes that schools should be learning organisations where a culture of ongoing learning is actively developed. These concepts are presented and legitimated within the context of Australian public school education policies, as performing educational purposes. Given this subplot then, it is important to consider both how digital technologies are used, and how the fostering of the concept of continuous or ongoing learning is proposed.

Although the policy texts indicate a commitment by the public schooling sectors to becoming learning organisations where continuous improvement underpins the work of the organisation, research of these concepts within educational settings has been small in number (Mulford 1998). While Hargreaves (1995) asserts that ‘organizational learning is becoming one of the strongest inspirations for educational change’ (Hargreaves 1995: 17), Fullan (1998) argues that schools are not yet learning organisations. Keating (1998) however, suggests that schools should become learning organisations ‘both to ensure continuous improvement in educational practice and to teach students how to function well in such organizations’ (Keating 1998: 707). He argues that the following characteristics should underpin the work of schools wishing to become learning organisations: establishing commonly agreed goals; actively committing to the concept of continuous improvement; establishing and maintaining horizontal networks
across the organisation for information flow; harvesting of expertise across
the organisation; and an ability to use such a system.

to be learning organisations that there are two factors of prime importance
that must be legitimised within the school as an organisation and by the
schooling systems. Firstly, professional learning must be considered as
required or essential and secondly, learning must be integrally linked to the
goals and activities of the learning organisation. In other words, staff
professional development must not be viewed as a token effort but must be
seen and funded as a legitimate activity contributing to the personal and
collective learning of the school and more broadly to the schooling system.

Such theorising applied to the uses which can be made of digital
technologies in the public schooling systems however, requires a change to
the current arrangements for professional development, that were
summarised earlier in this chapter. It was outlined that based on the figures
identified in this study, between five and ten per cent of the funds allocated
for the introduction and use of digital technologies in schools at a state or
territory level had been allocated to professional development of teachers.
The policy Learning in an online world (EdNA 2000a) has asserted though,
that this is an inadequate amount of funding to allocate for teacher
professional development in order to bring about the changes proposed.
Therefore, presently the use of the phrases ‘learning organisations’ and
‘continuous improvement’ to be found in the policies and budget texts,
does not seem to reflect the reality that this requires funding to be
committed for teacher professional development, as Mulford (1998),
Fullan (1998) and Keating (1998) have each argued.

Mulford (1998) has provided the following indicators upon which
organisational learning should be based and which contribute to a
successful learning organisation. These are
• developing and maintaining common understandings leading to shared visions;
• working as a team;
• undertaking professional learning as required and desired;
• openly and critically examining work practices;
• trying out new work practices when old practices do not achieve their required ends;
• establishing and maintaining a work culture that is based on ongoing learning; and
• understanding individual and systemic influences and relationships.

Hargreaves (1995) warns however, that there are limitations to the theory of organisational learning for schools. He asserts that these can be traced back to the origins of the theory emanating from the corporate sphere. In particular he points to the concept of ‘continuous improvement’ which he argues is a central concept for learning organisations. He states that while ongoing learning or continuous improvement is important, that ‘the commitment to continuous improvement can easily degenerate into interminable improvement where no one values heritage and such vital ingredients of schooling as tradition, continuity, and consolidation’ (Hargreaves 1995: 17-18, emphasis in the original).

Giroux (1981) and Hargreaves (1995) have warned too that one of the difficulties of applying versions of systems management theory such as those described here, to schools, is that it generates the capacity for a ‘blame the victim’ approach to dealing with problems within schools, and within the schooling sector. Giroux (1981) and Hargreaves’ (1995) concern is that schools are susceptible to influences where their source is outside of an individual school. Giroux (1981) puts it this way:

systems management theorists suggest that we tune up on behavioural objectives in order to structure our educational experiences in ways that promote efficiency and prediction. In all these cases, schools curiously exist beyond the imperatives of class
and power, and appear as self-contained islands (Giroux 1981: 92-93).

Irrespective of the critics of systems management theories, and whether ‘learning organisations’ can be viewed simply as rhetorical visions or not, the concepts of learning organisations and continuous improvement are nonetheless presented and legitimated as having educational purposes within the context of Australian public school education digital technologies policies. This then requires asking how these public policies are to be implemented. For schools, instead of using the phrase ‘continuous improvement’, the ability of an organisation to monitor its activities, maintain successful practices and replace unsuccessful practices with more appropriate activities, thereby constituting itself as a learning organisation, may better capture the notion underpinning the concept of ‘continuous improvement’ and its role in defining a learning organisation.

If we argue then, that schools should be learning organisations where a culture of ongoing learning is actively developed, then it is important to consider both how digital technologies are used and how the concept of continuous or ongoing learning can be fostered. It was argued earlier that one of the characteristics that contributes to the development of a learning organisation is the capacity to openly and critically examine its work practices. There has been a tendency for the traditionally centralised, and at times closed organisational structures of schooling to be reproduced in order to manage the use of digital technologies. Tapscott argues however, that ‘open systems are necessary to create open organizations’ (Tapscott, 1996: 110) and such values, it is argued here, should underpin the uses made of digital technologies in schooling. In Chapter Six then, open systems of using digital technologies are debated. This is undertaken using the concept of ‘reauthoring’ along with the strategic management process of scenario planning, in order to consider how closed systems of using digital technologies can be made more open.
There is increasing pressure on chief executives of education departments around Australia then, to demonstrate that digital technologies do improve both student learning outcomes and the quality of teaching and learning provided. This, in part, is to placate Treasury officials concerned about the costs of these initiatives (cf Forrest 2001). The importance of teaching and learning when considering the use of digital technologies in schooling was raised in several research conversations both in relation to ‘face to face’ and distance education methodologies. It is to that which we will now move.

Plot Three: Teaching And Learning

Using digital technologies has been identified as an important part of teaching and learning processes. This story-line can be seen threaded throughout the policies and budget texts. While there is an emphasis within the policies and budget texts upon the improvements to schooling that digital technologies in themselves offer, in the research conversations there was more emphasis focused upon the role of the teacher, and his or her relationships with students. One of the senior state sector bureaucrats described the relationship between teachers and students’ learning this way.

With your work as a teacher, how that relates to the processes of engaging kids in learning; and what works and what doesn't work; their sense of ownership of what happens; that's their sense of engagement with what happens; their sense of being part of the actual directions; the process of making explicit what you want them to learn; how you help them learn; and within that what it means to show them how they’re learning and what they’re learning through explicit, setting out directions, setting out assessment, setting out feedback. So it's really about making learning effective, making learning explicit with what you teach, and within that being clear about what are the essential learning processes, in a sense, what are the learning processes that support them, and if they’re not present, can hinder that. So it's being explicit about how students understand the nature of their own
learning, and can extend that in situations when they're on their own (GG 19 July 1999: lines 34-47).

This same officer continued, explaining his views about student learning.

Learning requires engagement so it's students working with others, whether it’s by communication, whether it's by shared learning, whether it's by online access to other resources apart from that which is in the local environment. Essentially learning is a process that involves doing something with what you’ve got. You don't just sit there and absorb, but you actually have to engage and interact with your past understanding, your past knowledge, your new understanding, your new knowledge, and what comes out of that. And it's, that certainly involves that interaction, not necessarily with the computer or the program, but with people (GG 19 July 1999: lines 115-124).

While the humanity involved in the processes of teaching and learning was recognised by the participants in this research, the way the technologies are conceptualised to be used within teaching and learning processes was a matter of some debate. The following discussion considers the use of email in teaching and learning, and the national directions underway in developing ‘online content’. Emerging from the policies and budget texts reviewed and from the research conversations conducted, is the changing distinctions made between ‘face to face’ and distance education. While ‘face to face’ schooling is being described as ‘mainstream’ and is being juxtaposed with distance education, at the same time the two methodologies are also being considered as converging. Debates about each of these plots, which together comprise the ‘teaching and learning plot’ within this educational narrative, now follows.

Subplot one: using email

Digital technologies have the potential to overcome the difficulties of moving information and resources between teachers and students where
time and distance can be barriers to rapid physical movement of people and materials. This potential use of the digital technologies in sustaining distance education in regional, rural and remote locations has been recognised by HREOC (2000b) and the ICPA (2000). It was also recognised by participants in this research project. An email from a first year teacher located in a school a couple of hours drive south of Uluru (Ayers Rock) illustrates this saying, ‘I am finding email a bit of a lifesaver as the mail plane comes twice a week up here’ (MM March 4 1999: lines 2-3).

Students participating in this research indicated that using email and other text-based communications was the main way they used digital technologies as part of their schooling. They emphasised the speed and improved communications between themselves and their teachers, with each other and their friends, as contributing to the reasons why they used email facilities. The following comment from a student is indicative: ‘well I liked to actually be able to talk [metaphorically referring to writing text into the computer] to my teachers and the other students, and you get a straight away response like you do at camp or school experience or something like that’ (Student 4 20 March 2000: lines 1-3). The use of the Internet for speed of communication over the postage system, was also reported by other students participating in this research.

I use the email because it’s quicker than mail. Because when I send an email to my teacher, it doesn’t take as long. Ordinary mail takes a week usually. With email I send it away and get a reply the same day. And it's more exciting, and you can send electronic copies and attachments like pictures or website names (Student 1: March 20 2000: lines 17-20).

It is the speed of communication between the students and their teachers and other class mates that was the attraction for using digital technologies in distance education for teaching and learning purposes.
The MCEETYA report *Real time: Computers, Change and Schooling* (Meredyth et al 1999), which focused upon the use of digital technologies in ‘face to face’ schools, likewise identified the main communication use of digital technologies by students, was for emailing others. It was reported however, that while students in ‘face to face’ schools used email more so than their teachers, nonetheless using digital technologies for communication purposes was not a widespread practice in ‘face to face’ schools (Meredyth et al 1999). This sits against the primary purpose for using digital technologies in distance education where their use overcomes the problem of slowness in the postal services. That is, for distance education students there are clear purposes for using digital technologies as part of their schooling. Given the lack of use of digital technologies for communication purposes identified in ‘face to face’ schools, and the nature of the use of digital technologies in distance education, this would suggest then, that should face to face’ schools wish to use digital technologies for communication purposes, it is likely that there are lessons that could be learned from the experiences of distance education students and teachers who have used email and other text based software applications as part of their teaching and learning practices.

Subplot two: online content

While the communication capabilities afforded by digital technologies was stated as an attraction for using them in distance education, another emerging purpose for using digital technologies has been to access ‘online content’. Considerable effort has been undertaken at a national government level to determine what is intended by the phrase ‘online content’ (cf Curriculum Corporation 1999; McRae 2001), where ‘content’ often is intended to refer to ‘curriculum content’. For the purposes of this thesis ‘curriculum content’ is defined as the planned and documented learning activities and desired outcomes for which teachers are responsible. ‘Online’ refers to the medium on which the content is placed; that is the Internet. CESCEO (1999) has defined ‘online curriculum content’ as ‘digital materials and tools designed to foster, generate and assess learning
and thus have an inherent teaching or teaching support function’ (CESCEO 1999: 1). Conceptually the processes of teaching and learning of online content tends to be referred to in policy language, as ‘delivery’. A danger of separating digital or online content and its development from its delivery however, is conceptually it decouples the content of teaching and learning from the processes of teaching and learning. This is a dilemma that school level distance education materials developers have faced for some time.

The decoupling of teachers work from the development of the content to be taught is reinforced by the use of the language which employs the phrase ‘learning objects’. The online content being developed through the Le@rning Federation (SOCCI) project is using a ‘learning object’ approach where ‘learning objects’ are defined as one or more files designed to stand alone or as a component of a learning sequence that may be created during the development process or later constructed by an end user [a teacher] to suit their specific learning and teaching requirements. At the most granular, a Learning Object must have content integrity and be able to stand alone (Curriculum Corporation 2001: 9).

It should be noted that it is envisaged that the ‘learning objects’ are not courses but are individual components of these. A metaphor to help conceptualise this is to think of learning objects as pieces of lego® or building blocks that can be put together in a variety of ways depending on the context.

In the provision of distance education, different states have approached the dilemma concerning the decoupling of the content of teaching and learning from the processes of teaching and learning, in different ways. Some states have a separate materials development unit for the construction of materials for use by distance education teachers, and in other states the distance educator develops his or her own materials. The cost and expertise involved in developing multimedia products that incorporate into one
digital product the traditional teaching materials for the distance education
teacher (print, audio, video materials) has seen the dilemma of decoupling
the content of a course from the teaching and learning processes, continue
to be problematic.

What has become apparent in this sort of online content development
model however, is that where the decoupling of content development and
teaching processes occurs, there exists the requirement for an
understanding by the developers of the online content (many of who may
not be trained educators), of the skill levels of the ‘end users’ (usually
teachers, students or both). Determining how it is anticipated that those in
the school community will use the materials is an important consideration
in order to ensure that the materials are appropriate, accessed and used.
Further, recognition that different readers of the online content can make
different interpretations of the same material means that there cannot be
binary expectations of the outcomes to be achieved by the users of the
online content.

Describing students’ and teachers’ respective roles in the learning
partnership using online content then, is important for the development of
that online content. Specifying these roles supports the process of
achieving understandings and pedagogical approaches upon which the
online content developments can be based. In addition, supporting teachers
to develop the ability to manipulate and use the learning objects once they
are developed requires professional development. Given the importance of
communication in teaching and learning, it is unclear how the use of email
and other communication software can be used in a ‘learning object’ model
of online curriculum content development. As such, the use of email in
teaching and learning requires further investigation.

Subplot three: role of teachers using online content
To specify the skill levels necessary to use online content requires
consideration of the role of the teacher. The relationship between the
online content to be taught and how it is to be taught by the teacher, was
recognised by many participants in this research to be a thorny problem. Some saw that the role of the teacher is changing with the use of online content and therefore the Internet, and others did not.

While in this study, some considered the role of the teacher was changing, for the leaders in schools and schooling systems in particular, the nature and extent of these changes were unresolved matters. Two difficulties in particular are confronted in developing online content on behalf of teachers. Firstly, as already mentioned, there is the decoupling of the development of the content to be taught from the methods to be used. A second problem is how to avoid constructing teachers as passive recipients of the materials developed on their behalf.

It is argued here that the role of the teacher in using online content is problematic, and the extent of the problem requires canvassing in order to gather the different stories that can be told about the matter, and to determine some views about the nature of the problem. With the use of the following extracts from the research conversations then, the role of the teacher is debated, with each extract contributing a different perspective to the problem. Together the extracts provide insights into the nature of schooling that is emerging with the increasing use of digital technologies.

One of the state level chief executives described his observations concerning the role teachers using online content in the following way.

Instead of the teacher being the source of knowledge and in a sense introducing kids in a systematic or ordered way, you now have kids having control of potentially very, very complex systems that are not necessarily graded in terms of their comprehensibility or anything else. The relationship between the student, the teacher and knowledge is different. And I think in this environment it calls on different skills perhaps on the part of the teacher, to, at one level, maybe simply acting as a guide, and saying, “look these web sites actually have got material at the appropriate developmental level
for you.” Or can help students to actually develop some information literacy skills. You know, how do you, what counts for real knowledge in this environment? How do you tell whether a web site is full of made up information, or, you know run by some extreme right-wing fascist group in the US that you know, wants to say that the Holocaust didn't happen? It might, you know, to an unsophisticated and un-tutored mind, you could read all of this, take it as literally true and say there's a world wide conspiracy, you know, and how does a kid resolve all of those issues? Well, I think, you know, you could always say that the role of the teacher is to develop core skills. And maybe the core skills are a bit different in this environment. I don't know … It raises interesting questions where students’ basic learning experiences and assessment have been online. How do you know whether the person sitting down the other end of the connection is actually the student. So there are a whole lot of quite interesting issues. I mean, distance education people, providers, have always had to do deal with the issues that are actually raised in a different kind of a form, in this environment (OP 16 August 1999: lines 177-210).

In this next extract, one of the principals of a state’s suite of distance education schools indicated her deliberations on this matter this way.

The role of the teacher has been changing but I think it’s about to accelerate and needs to accelerate rapidly, because I think what we need to do perhaps, and I don’t know what this might look like but whatever the course development is, whether it’s in print or in online, multimedia or whatever, that it’s more a framework and then teachers individualise that for students, and I’d be suggesting that a lot of that negotiation and that extra information et cetera is provided online, so that teachers will need to have the, well the expertise I guess to adapt and negotiate curriculum and then to get it online with some technical support and that, I guess, that’s what I see is an incredible change for some teachers who currently believe
that the written materials are prescriptive and so they use it like a recipe (AZ 26 July 1999: lines 315-327).

A commonwealth bureaucrat did not see the role of teachers changing however. He stated that
at a fundamental level it’s the same old thing. It’s taking a mass of information that’s out there, understanding the sorts of needs and learning styles of individual students, and creating interest and doing that essential knowledge intermediary role. All it seems to me is that what you are doing is providing, hopefully more powerful tools, to carry out that same role (EF 13 July 1999: lines 515-520).

A principal of a ‘face to face’ school saw the role of the teacher as remaining central to students’ learning.
I would guess that it will empower the teacher. A lot of people see it as getting rid of the teacher. I think it will empower the teacher because I think kids, like with anything, there is no silver bullet. Kids enjoy the computers for a while, then they want to do something else. OK. So where the great strength is, I think, is in our methodologies. … Teachers have to accept that there will be multiple outcomes. Systems will have to accept that there will be different ways of learning. I can’t see that the teachers won’t be in the centre of learning processes, I think their role is crucial in guiding it. I think what they have though, through the ICT’s, is a set, is a repertoire of materials, and a repertoire of interactions the kids might undertake. It has never been made before, and we just don’t know how to use them. And, again a lot of it is at the potential stage rather than at the proven stage, I think (YZ 8 July 1999: lines 210 –214 and lines 260-265).

Each of these officers then, were articulating what they saw were the implications for the nature of the work of teachers using online content and digital technologies as part of their repertoire of teaching methodologies.
As can be seen, the role of teachers and the nature of how teachers do their work using digital technologies are generating some dilemmas.

The implications of using online content and moving teacher-student relationships into an online environment with the use of digital technologies, was seen by a senior officer in one of the telecommunications carriers as a source of extra work for teachers.

What does that mean for their workload? It raises it dramatically. There’s an expectation now. You’ve got your laptop now, so you can do your classroom preparation. You can be filing your reports from home, in the evenings. I know that teachers have always worked very hard out of school hours. But by increasing the expectation and the range of things that they can do, I think that this is something that really does need to be looked at on an industry-wide basis. Of how teachers work is changing dramatically in the light of ICT's [information and communication technologies]. And I don't believe that that has been done yet (AB 12 July 1999: lines 480-489).

No matter the perspective, the consistent message conveyed through the research conversations was that the role of the teacher is central to students’ learning and most saw the advocated use of digital technologies in teaching and learning as representing a change to how teachers currently do their work. While there was recognition of the complexity of the issues surrounding the question about the role of the teacher in using online content and the implications for their teaching and learning, responses to the dimensions and nature of the changes however, were less well articulated. In light of these dilemmas then, there is a necessity to provide spaces for teachers to be able to discuss these issues.

To again circle back to the debate concerning teacher professional development raised earlier in this chapter then, it is a concern that of the total funding states, territories and the commonwealth make available for
digital technologies initiatives, only a small percentage of these funds has been directed towards teacher professional development. Alongside of this, the nature of the professional development provided to teachers to date has tended to focus on being taught the basics of how to use a computer. While these basic skills are important, the nature of the provision of professional development seems to have concentrated on the development of these skills rather than wrestling with the more conceptual issues facing teachers. As Learning in an online world (EdNA 2000a) states, ‘teachers are developing basic ICT [information and communication technology] skills, but the main challenge of integrating new technologies into teaching practice still lies ahead for the bulk of the profession’ (EdNA 2000a: 5).

This suggests that more sophisticated teacher professional development is required if some resolutions to the questions arising from teachers using online content, including those arising from the establishment of the Le@rning Federation (SOCCI) project, are to be addressed.

As teacher professional development has not tended to focus upon debating the models of teaching and learning that can be employed with the use of digital technologies, an under-developed model for using the Internet in teaching and learning is how students and teachers can directly contribute to a developing stock of Australian curriculum materials. That is, how can they be constructed into active participants in such processes rather than being constructed passively as ‘end users’ of ‘learning objects’. This requires extensive discussion and further research. As such, conversations broadly held about possible models are urgently required. While national initiatives such as the Le@rning Federation (SOCCI) are developing online content however, teacher professional development is considered mainly the responsibility of the states and territories. The role of the teacher using online content then is an issue with many dimensions and requires each state and territory to determine its importance for professional development funding to be allocated to support the resolution of some of the issues raised here.
Subplot four: a telecommunications problem

A difficulty for developers of online content is to develop the materials in the present yet predict the technical facilities required to access the materials in the future; perhaps for use in one or two years hence. At the same time, while there is an emergence of a ‘new federalism’ (Lingard et al 1995), access to bandwidth is not uniform across Australia. The speed of connection for each state and territory varies, and while Western Australia is making 10 mbps available to its 400 metropolitan schools and a minimum of 256 kbps to its 32 very remote schools (Carpenter 2001), and the Northern Territory is making 400kbps bandwidth available to its schools (Northern Territory Department of Education (LATIS) 2001b), states such as South Australia and New South Wales only have 64 kbps available (EdNA 2000b). Further, while the commonwealth government has announced an improved Internet service to rural, regional and remote Australians with connections speeds of 19.2 kbps (Commonwealth DCITA 2001b), as indicated earlier, these will be too slow to access and use the planned Learning Federation (SOCCI) learning objects. The speed of 19.2 kbps will allow for the use of email but not much more.

The lack of bandwidth provided through the telecommunications infrastructure was identified as a barrier to using the Internet for educational purposes by the students, parents and teachers in the school communities that participated in this study: ‘I use the Internet for email. I hardly ever use it for searching because it’s too slow’ (Student 5: 20 March 2000: lines 5-6). Variations within and across states have the capacity to impinge on the nature of the online experiences available to students depending on their location and the infrastructure available to them.

The differences in the infrastructure afforded through bandwidth are reminiscent of the debates about the size of railway gauges held between the states and the commonwealth. It is a salutary lesson however, to reflect that it took nearly one hundred years, characterised by a lack of national agreement, to resolve the national railway gauge debate (Australian Railway Association Incorporated 1998-1999).
It has been identified here then, that there are different ways in which digital technologies can be used in teaching and learning. The development of online content is being undertaken in order to supply teachers with digital ‘curriculum content’. Generating the online content though, has raised a series of subsequent dilemmas including that of the role of the teacher and concerns about the lack of universal coverage afforded through the existing telecommunications infrastructure. The use of email has been identified as the main communication use made of digital technologies by those participating in this study, and this has demonstrated the importance of communication and relationships in schooling. Learning is a process of guided discovery, not simply one of passively receiving information. Relationships therefore are important in teaching and learning.

**Plot Four: Converging Of ‘Face To Face’ And Distance Education**

The advocated ubiquitous use of digital technologies in schooling means that every school potentially can be a distance education provider. Digital technologies can be used in the provision of distance education by distance education schools, and in ‘face to face’ classrooms. Furthermore digital technologies can be used to provide students enrolled in ‘face to face’ schools with some course offerings available by distance. This is seeing the convergence of these two previously separate styles of schooling occurring, or having the potential to occur. This can happen in several ways. Therefore, what traditionally has been understood as ‘face to face’ schooling and distance education, is changing (Moyle 1999).

In Chapter Four attendance requirements were identified as being one of the features that has distinguished ‘face to face’ schooling from ‘distance education’. The use of digital technologies in all schools is now generating reviews of how schooling can be provided to all students using digital technologies. This has included the canvassing of changes to the attendance requirements outlined in Education Acts (cf Government of South Australia 1999b). In a research conversation with a principal of a
‘face to face’ secondary school, when asked about the future of distance education, he responded as follows.

I would envisage the demise of a separate school like that. … I can conceive of … specialist providers that are school based. In fact I think that would be a healthy thing. … In fact we serve as a home base for an outposted teacher from the [distance education school]. … While that isn’t always smooth organisationally for the teacher, … I think it is the way forward (YZ 8 July 1999: lines 517-525).

In another of the research conversations, a different principal also of a suburban ‘face to face’ school indicated that teaching some classes in a distance mode to another remotely located school, had been introduced into the work of teachers at his school. It is apparent from the following extract that this principal and the teacher concerned recognised that the relationships between the teacher and the students were important.

We have actually taught another class in [name of a remote town]. We taught Indonesian from here. And [they] thought it was better than their face-to-face teaching, but that was the teacher we had, I think. She just related so well to the kids, and went down and visited them, I'm not sure, a couple times in the term. She used to have personal relationships with them (FF 7 December 1999: lines 110-115).

In the future, traditional ‘face to face’ schools may also consider the way schooling at a distance is organised, and the way lessons at a distance are conducted. Simply moving course offerings from a ‘face to face’ to an online format will not achieve cost savings in itself since the teacher’s role remains central, while at the same time there is the added cost of preparing teaching and learning materials for publishing to the online environment.

At a systemic level, some states and territories are specifically funding initiatives outside of the provision of distance education using online teaching and learning. In these systems there are debates about whether these initiatives are directly replacing the role and function of distance
education schools. Certainly, the teaching and learning methodologies used in these newly emerging initiatives and those of distance education schools using digital technologies, are starting to share some commonalities. The following state initiatives are indicative of these trends. Queensland has introduced the Virtual Schooling Service which sits outside of the network of distance education schools. This Service is intended to merge ‘information and communication technologies with the Education Queensland Wide Area Network (ConnectED) to offer Year 11 subjects using both synchronous and asynchronous delivery methods’ (Curriculum Corporation 2000a: 77). It is intended to ‘expand curriculum choice to small, rural and remote secondary schools and (enhance) students’ access to relevant course materials and educational resources’ (Curriculum Corporation 2000a: 77).

In Tasmania the commonwealth funded OPEN–IT project is developing online teaching and learning materials, bringing together officers from the Tasmanian Open Learning Service (TOLS) and those responsible for mainstream ‘face to face’ schooling. Materials are being posted to the Tasmanian Education Department’s Discover website. As summarised in Appendix Ten, in the 2001-02 state and territory budgets, the Australian Capital Territory, Queensland, Victoria and New South Wales announced the development of Centres of Excellence for Mathematics, Science and Technology. In South Australia the Technology School of the Future has been operating for some time. In Tasmania, the Centre for Excellence in Online Learning has the role to coordinate the provision of online schooling across Tasmania. The coordination includes the services provided by the TOLS. Each of these initiatives represents new state structures which either incorporate or potentially usurp the state-wide role of distance education provision.

It can be said then that during the 20th century, distance education and ‘face to face’ schooling have tended to operate separately, both systemically and methodologically. In the 21st century these systems and methods presently
are converging. It is likely then, that teachers will be required to use a wider range of teaching and learning methodologies. This may mean having a heavy distance education orientation with little ‘face to face’ teaching with one group of students, through to having a heavy ‘face to face’ orientation with little distance education teaching with another group, or it may mean having a balance between ‘face to face’ and distance education teaching methods. To help conceptualise the nature of these changes to the teaching methodologies used, these teaching methodologies can be considered as being located anywhere on the circle, in the diagram below.

\[
\begin{array}{cccccccc}
20^{\text{th}} \text{ century} & \Rightarrow & \Rightarrow & \Rightarrow & \Rightarrow & \Rightarrow & \Rightarrow & 21^{\text{st}} \text{ Century} \\
\text{Distance education methods} & \rightarrow & \text{Mainstream schooling methodologies} & \rightarrow & \text{Distance education teaching and learning} & \rightarrow & \text{Face to face teaching and learning}
\end{array}
\]

\textit{Diagram Four: Convergence of ‘face to face’ and distance education systemic initiatives and teaching methodologies}

Such an approach would mean that teachers would be required to be more highly skilled professionals than they are currently. This therefore would have industrial ramifications for the appropriate reimbursement for such highly skilled professionals.

Another way in which the work of distance education officers and those working in ‘face to face’ settings is converging is through the development of online content. It is the place where the work of distance education materials development units and the work of those working in online curriculum developments for use by students enrolled in ‘face to face’ schools, presently overlap. This is a place where the experiences of specialists in the provision of distance education materials may have some wisdom worth sharing with others undertaking similar work.
**What's Missing: Relationships Remain Important**

Absent from the policies and budget texts but in evidence in the research conversations with the parents, students and teachers was the reiteration of the important place the teacher holds in educating young people. A professional lobbyist on behalf of parents, and a parent herself of primary-aged children attending a ‘face to face’ school, stated in one of the research conversations that

> the social importance of what happens in the classroom is the central fundamental issue of the relationship between the child and the teacher. And the fact that no matter how much gorgeous, add on toys we have, we must never, ever break that bond. That’s central to the whole education process (CC 18 August 1999: lines 65-69).

A senior state bureaucrat also indicated that schools performed important social roles and that this was important for the health of a democratic society.

> Schools are certainly about intellectual and academic learning but they’re also about, you know, social learning, they’re about moral and ethical development, they’re about development of understandings of the social constructs and the community constructs that make our society. So school is also a social experience as well as a learning experience (GG 19 July 1999: lines 128-133).

Later in the same conversation, this officer indicated the important place he saw schools holding given the advocacy for the use of digital technologies in schooling.

> My argument would be that because of the learning, the virtual learning environment is all the more reason for a school. Because I can't think of any other experience which a young person goes through, where you have a sense to develop that social, emotional, ethical development of a young person. To support that in a common, consistent way, apart from schooling. So if you totally decentralise learning to the individual experience, then where a young person's development will come from will be all the inbuilt
ethical or moral values that are embedded within your software. And we, what you don't get is the responsibility of people towards each other, which is at the very heart of schooling. It’s the whole notion of behaviour management and discipline and rules are predicated upon a shared belief, and shared value system, which I believe, shapes a young person to be a better citizen, in a democratic society. So the very notion of having sexual harassment, or racist harassment grievance procedures in a school, without social learning, is also about preparation for a lifelong democratic society. Now you don't get that without creating a social environment in which learning occurs. So if the conclusion, or the ultimate destination of technology is so decentralised, that learning becomes an isolated individual experience, you lose that. I reckon you lose the fabric of society, which I think underpins, shared values upon which a democracy is based. So I reckon there are really fundamental issues at work, about the nature of learning, but also about the nature of schooling in a democratic society (GG 19 July 1999: lines 443-466).

The social purposes of schooling and the important place that human relationships hold in achieving these purposes was recognised by participants in this research as important both for the individual and for society. An often reported factor for success at school is the quality of the relationship between the student and the teacher (cf Elias et al 1997). By assuming that digital technologies of themselves improve student learning outcomes is to ignore research which indicates that the personal bonds between teachers and students can influence much of the learning that occurs through schooling (cf Connell, 1985).

The traditional importance of relationships in distance education was outlined in Chapter Four. In this study, during 1999 and 2000 through the stories gathered, the importance of the relationships between the teacher and the student were consistently reported. The following extract from a transcript indicates this.
KM: So tell me, you said the arrival of the first teacher was a bit of an event.

P3: She came off the plane and these two [referring to her own children] ran to her and embraced her. It was like meeting one of the family (P3 December 1999: lines 75-78).

This story is similar to the story from 1962 reported in Chapter Four where a remotely located student, after her 200-mile journey from Oakdale Station suddenly caught sight of her teacher. The newspaper reported that ‘she needed no formal introduction. Brushing past her mother and father she ran up to her teacher and hugged him’ (Richardson 1962: 2).

All the students participating in this research indicated that they liked the School Camp because they could see their teacher and put a face to the names of their classmates.

What I like about camp is that I get to see all my friends and make new friends, and I get to see my teacher. What I really don’t like is it takes five hours to get from our place to [here]. (Student 2 20 March 2000: lines 10-13)

The distance education students reported that they liked learning in the close physical proximity of other students and their teachers. The teachers indicated that they thought this was good for the students’ learning, as the ‘face to face’ experiences offered through school camps then sustained the personal relationships between class members and their teachers when the students returned to their respective homes.

What is not seen in the policies and budget texts, and was not raised by the policy makers participating in this research, is the important place relationships between teachers and their students, and in distance education, the important place a parent holds with supporting compulsory aged students studying at home. In the research conversations only the parents and the students raised this point. The parents indicated that for their children to successfully learn at a distance required a strong
partnership relationship to exist between the teacher and the parent. The following extract is illustrative of this.

We’re [the parent and the teacher] trying to get to a happy medium of how much help to give, and how much help not to give. And let them [the children] know that. OK they are struggling with that and OK, they need that bit more time to be able to do this, or stay down a bit longer, or do whatever. Or if they need that bit more advanced work to keep them going. Trying to do the balance sometimes is a bit difficult (P5 10 April 2000: lines 419-424).

For the distance education teacher then, the relationships with the family, both with the students and his or her parents, were considered important by the parents participating in this research. This is a perspective to the teaching and learning processes used in distance education that is pertinent for ‘face to face’ schools wishing to offer some subjects at a distance using digital technologies.

A senior state level bureaucrat participating in this research indicated the importance he saw of human relationships in teaching and learning when using digital technologies, as the following indicates.

I think the IT does occur in a social as well as educational context for young people and also for a lot of schools but that might not get picked up as such because what IT will do is make it less necessary to have a social context in which the learning will occur. But I think to do that would be to ignore what are some of the reasons why schools are important in our society, and certainly in a democratic society (GG 19 July 1999: lines 137-143).

When teachers are using digital technologies to conduct lessons at a distance, irrespective of whether this is a part of a ‘face to face’ school program or is being conducted within a distance education school, means therefore, that the relationships with the students and their parents require fostering and maintenance. This has to be scheduled into teachers
workloads and thus into the cost structures of providing schooling to students irrespective of their location.

**In Summary**

In this education narrative several plots and subplots have been identified. The use of digital technologies in schooling it is claimed will improve the standards of students’ outcomes from schooling, the quality of the teaching and learning, and will have a fundamental role to play organisationally as schools and schooling systems become learning organisations.

Digital technologies can be utilised in different ways for teaching and learning purposes. This is seeing the generation of online content being developed in the private sector on behalf of teachers. The availability of digital technologies provides every school with the capacity to offer some of their courses in a distance education format. This has implications for the skills and work of teachers, as using digital technologies requires extensive planning of how to represent online content as well as planning which teaching methodologies will be used with the online content. Professional development of teachers has not been satisfactorily provided in order for the proposals in the policies to be fulfilled in practice.

Relationships between the student and the teacher are important in all teaching and learning. In distance education, the relationships between the teacher and the parent supervising their children’s schooling at home are also important to incorporate into the planning for the delivery of distance education in an online environment. To enable the use of digital technologies it has been argued, requires an infrastructure that includes teachers as well computer hardware, software and telecommunications. It has been argued that these are essential for public schooling to be universal.

The next section of this chapter discusses one part of this infrastructure, the story of the most common suite of software used in the public schooling sector in Australia, that of Microsoft® software. This now follows.
SECTION FOUR
THE MICROSOFT® STORY

In debating the meaning of public schooling in Australia in the 21st century, with the present public schooling sector policies urging the ubiquitous use of digital technologies, it was demonstrated in Section One of this chapter that each state and the Australian Capital Territory has signed a ‘whole of education department’ agreement with the Microsoft® Corporation. (A summary list of these licence agreements is provided in Appendix Six). In Section Two of this chapter the movement towards markets in the provision of public school education was raised. The relationship between the public schooling sector and private markets was debated further in the ‘economic narrative’ outlined in Section Three. It was argued in this third section that the advocacy of the use of digital technologies in schooling, in policies and budget texts, is seeing commodity markets and schooling becoming linked. This fourth section of this chapter takes up in detail, the story of one particular commodity directly connected to the provision of public schooling: the story of the use of Microsoft® products in the states’ and territories’ public schooling sectors in Australia. The respective state and territory Microsoft® agreements are covered by ‘commercial-in-confidence’ clauses in the contracts, and therefore are not available publicly, but information has been pieced together here, from a variety of public sources such as Parliamentary Hansard.

Microsoft® Corporation holds what can be considered as either a monopolistic or oligopolistic place in the global software market. It is argued in this section that due to the dominance of Microsoft® Corporation in the marketplace, that it has an hegemonic relationship with the schooling systems in Australia; the hegemony of Microsoft®. Further, it is argued that Microsoft’s® position in part, is maintained by receiving legitimation and authority for its products in Australia, through the State. Reflexively, this feeds both Microsoft’s® and the State’s capacity to act hegemonically through schooling.
To draw again on musical metaphors, this section operates like a bridge passage between the earlier sections of this chapter and the forthcoming Chapter Six. A bridge passage in music draws upon earlier material but moves the composition from the key in which it is located, to another. Here, the ‘Microsoft® Story’ draws upon the economic and educational narratives outlined earlier, and merges these into a narrative of its own. This then provides the basis for proposing actions for reauthored counter-hegemonic stories to be proposed in Chapter Six.

In this section, first the licence arrangements (as far as they can be ascertained), that currently exist between Microsoft® Corporation and the respective schooling systems are laid out: each state and territory’s ‘Microsoft® plots’ are told. The roles of Microsoft® Corporation and the State as authors and characters in this story are then debated. Interpretation of the story to consider how the hegemonic relationships are constructed and maintained is then undertaken. The language used to achieve these relationships is discussed. It will be seen that while each state and territory has traditionally proclaimed its uniqueness from each other, this uniqueness does not seem to have been borne out in this story. This section then, leads into Chapter Six where consideration is given to how this story may be reauthored.

The Use Of Microsoft® Products In Australian Schools

Microsoft® Corporation has signed licences with the schooling systems in each state and the Australian Capital Territory. The Northern Territory Department of Education has been undertaking negotiations with Microsoft® Corporation, but has not signed a territory-wide agreement. As outlined earlier in this chapter, all of the activities undertaken in schools using digital technologies are dependent upon what is commonly referred to as an ‘infrastructure’. Here ‘infrastructure’ refers to the equipment or hardware, software and telecommunications required to make the digital technologies work. Infrastructure also includes the local and wide area
networks used to link several computers together. Local and wide area networks are computers and associated devices that provide computer users with the means to communicate and transfer information electronically. The difference between a local and a wide area network is one of geography. The word ‘local’ usually refers to the linking of computers within one organisational unit (for example a school). A wide area network usually refers to computers linked together across a number of organisations, such as several schools linked to the central education department.

Outlined in the Parliament of New South Wales Hansard, the Minister of Education described the sort of funding commitment the government in New South Wales is allocating to networking connections. He stated that in the 2000-01 financial year the government would be ‘providing an additional $10.2 million for schools’ local area networking and cabling’ (Parliament of New South Wales 2000: 2). This would include the linking of all schools to the department’s wide area network. A network server on a local or wide area network refers to a computer that runs software that controls access to all or part of the network and its resources. The network system can provide support for the operation of the network and can also provide some centralised services. Similar sorts of initiatives to this one in New South Wales are being undertaken in the other states and territories of Australia, as indicated by the funding allocations outlined in Appendices Three, Four and Five.

**The Necessity Of Software**

One component that all computers require to work is software. There are two main sorts of software: the systems software or operating system (OS), which controls the workings of the computer; and the application software that allows computer users to undertake specific sorts of tasks such as word processing, using spreadsheets or developing and manipulating graphics.
Nothing on a computer will work without an operating system. Operating systems are used for making individual computers work as well as for making networks of computers work. That is, local and wide area networks are as dependent on a reliable operating system as is an individual personal computer (PC). Sometimes the software required for operating systems and networking is described as the language that allows computers to ‘talk to each other’. In Victoria, DEET has provided a definition of an ‘operating system’, that has been drawn upon here.

The operating system is the foundation on which applications are built. Commonly used operating systems include Apple Mac OS, MS-DOS®, Microsoft Windows®, Microsoft Windows NT™, UNIX, and OS/2. Operating systems are one type of software (Education Victoria 1999: 57).

Operating systems consist of ‘the software responsible for controlling the allocation and usage of hardware resources such as memory, central processing unit (CPU) time, disk space and peripheral devices’ (Education Victoria 1999: 57). In other words, an operating system is essential for computers to work as a stand-alone unit and in order to work in concert with other networks of computers.

To make an operating system and other software work requires programming. To program requires the use of a language. These are known as programming languages in which the authors write the commands required to make computers work the way they do. As Bob Young (2001) states

computer languages are called languages because they are just that. They enable educated members of our society (in this case, programmers) to build and communicate ideas that benefit the other members of society, including other programmers (Young 2001: ix-x).

Just like any other language, this is not a culturally neutral activity (Bigum and Kenway 1998; McQueen 1998). In addition, operating systems have not always been costed as a separate item as Capron (1990) states.
Once upon a time when you bought a computer, the operating system came with the hardware. First it was free, later not free, but in the large mainframe world, operating systems are usually defined by the vendor, with the user silently acquiescing (Capron 1990: 269).

Amongst computer programmers there is an ideological split concerning whether operating systems should be free or not (cf Himanen 2001; Raymond 2001).

The most commonly used operating systems employed by Australian schooling systems are Microsoft® products: Microsoft Windows® and Microsoft Windows NT™ (cf DETE (South Australia) 1999d; Department of Education (Tasmania) 2001b; EDWA 1999a). These can sometimes be referred to as the ‘back end’ software or the ‘back of office’ software. As the metaphor suggests, this software works behind other software programs. In this way it becomes almost unseen, but it is required to make computers work and allow networks to function. The branding of the operating system can be seen every time a school computer is turned on, yet it is often not recognised as important because it is so implicit.

With the increasing advocacy and funding available for using digital technologies, schools and school systems have realised that not only do they require hardware and telecommunications to make computers and the Internet work, but that they require the operating system software and the specific pieces of software required for certain jobs such as for administrative purposes, publishing and graphics development and manipulation. Currently these represent an ongoing cost to governments and to schools, as new computers are bought and updates to software and operating systems occur. Therefore, in order to get better leverage with Microsoft® Corporation than that available to an individual school, each state and the Australian Capital Territory has negotiated a ‘whole of education department’ software licence with Microsoft® Corporation. The following stories summarise the financial costs to each state and territory.
for the purchase of their respective ‘whole of education department’ Microsoft® licences.

**Australian Capital Territory**

The Australian Capital Territory was the first state or territory in Australia to sign a system wide licence with Microsoft®. In 1997 a four year licence was signed. The Department of Education and Community Services (DECS) reported that ‘this software is available to Australian Capital Territory educational institutions free of charge. At educational rates, the software is valued at over $12m if around 2,500 packages are acquired each year over the next four years’ (Australian Capital Territory DECS 1998: 2). In Parliament, Mr Stefaniak stated that ‘the IT package is valued at over $20m …. The key elements of the package are … approximately $12m of Microsoft software provided free of charge to schools; … over the next four years ’ (Parliament of the Australian Capital Territory 1997: 4575). It will be seen shortly, that if this price was the actual cost to the Australian Capital Territory, then it was the most expensive system-wide Microsoft® licence of all the states and territories. While Mr Stefaniak made this statement to Parliament, DECS documentation indicates that $1 million per annum was paid for software licences (cf Australian Capital Territory DECS 2000b). On a per capita basis, this is closer to the costings paid by other states, and therefore a more likely cost.

**New South Wales**

A ‘Microsoft® Software Enterprise Agreement’ was signed between Microsoft® Corporation and the New South Wales Department of Education and Training in 1999 (New South Wales Department of Education and Training 2000b). Mr Aquilina (Minister of Education) described the nature of this licence to Parliament stating ‘the Microsoft® licence covers office (sic) software, CD ROM based encyclopaedia products and computer-based training for teachers. Teachers will be able to use the Microsoft® products at home and all the new computers going into schools are preloaded with the latest versions of software products’
(Parliament of New South Wales 2000: 1-2). It has not been possible however, to locate an official statement concerning the total costs to the New South Wales government for this state-wide Microsoft® licence, however some indicators of the costs can be used. In 2000 there were 759,623 students attending New South Wales government primary and secondary schools (ABS 2001a). In the 2001-02 Treasury Budget Papers it states that ‘over the past four years, the addition of 90,000 multi-media computers to schools has reduced the computer to student ratio in Government schools to around 1:8’ (New South Wales Treasury 2001a: 6-4). On the basis of nearly 760,000 enrolments in New South Wales government schools, and a student to computer ratio of 1 to 8, 95,000 computers are required. Each of these computers must have the software for an operating system and the standard word processing software. Stated also in the 2001-02 Treasury Budget Papers is that the existing 90,000 computers in schools would be replaced and an additional 25,000 computers would be leased (New South Wales Treasury 2001a). This would suggest that the New South Wales Department of Education and Training is maintaining 115,000 computers for use in schools. It will be seen shortly that both Queensland and Tasmania have based their licence agreements with Microsoft® Corporation on the cost of $86 per machine (cf Department of Education (Tasmania) 2001b; Wells 1999a). If this is the case in New South Wales, then this would represent a cost for Microsoft® licences of $9.89 million per annum.

Northern Territory

The Northern Territory Department of Education has not signed a territory-wide agreement with the Microsoft® Corporation although it was announced by the (then) Minister of Education, in a speech to the Northern Territory Parliament that in 2001 there would be a rollout of ‘4000 workstations and 200 servers with regional-based support structure and access for schools to high speed Internet services’ (Lugg 2001: 4). Based on this information, it is clear that there will be the necessity for schools to have software and upgrades for this infrastructure, although at this stage this is not being supplied through a territory-wide Microsoft® licence.
Queensland

In Queensland, a three-year licence agreement was signed between Microsoft® Corporation and Education Queensland in 1999. The number of machines per year, for which the licence had been signed, was identified in a Parliamentary Estimates hearing by the Assistant Director-General of the Resources Division of Education Queensland. She stated in response to a question concerning the guaranteed number of computers covered by the licence in each year of the contract that ‘it was 25,000 in year one, 27,500 in year two and 30,000 in year three, which we felt was a relatively conservative estimate given that there are some 55,000 computers currently in schools.’ (Parliament of Queensland 1999: 490) The cost per machine was referred to in a Ministerial Press release by the Honourable Dean Wells (then Queensland Minister of Education) in which he confirmed statements he had made in a Parliamentary Estimates Committee. In Parliamentary Estimates Committee he indicated that the cost of the system wide Microsoft® licence would be shared between the department’s central office and schools, with schools paying $15 per machine per year with central office making up the difference. He stated that ‘the Queensland Teachers’ Union, principals’ associations and other groups have welcomed the move to use some of the Networked Learning Community Initiative funds to reduce the original $86 cost for each machine to $15’ (Wells 1999a: 1-2). This means in Queensland with a cost of $86 per machine and 25,000 machines identified in 1999, that this represented a cost to the state of $2.15 million. In 2000, with 27,500 machines requiring licenses, this equated to a cost of $2.356 million, and with 30,000 machines to be covered in 2001 this amounted to $2.58 million for Microsoft® software licenses. This was paid by the state, albeit that the costs were shared between central office and schools.

South Australia

Like New South Wales, South Australia signed a three-year commercial-in-confidence contract with the Microsoft® Corporation in 1999. The funding model for South Australia has been determined from a letter dated
14 June 2000 from the Department of Education Training and Employment (South Australia) to school principals titled Microsoft Software Agreement – Payment Information. This letter states that ‘a corporate contribution of $1.23 million per year which represents 65% of the cost ’ (DETE (South Australia) 2000d: 1) will be paid. The full cost to the state (that is, the cost to schools plus the cost to central office), can then be calculated to be $1.9 million per year of the agreement.

**Tasmania**

Microsoft® Corporation also signed a system wide contract with the Tasmanian Department of Education in 1999. Honourable Paula Wreidt (Minister of Education) stated in a Parliamentary Estimates hearing, that ‘we have just entered into a new software licensing agreement with Microsoft® and that will significantly reduce the amount schools spend on software. Instead of actually having individual software licences they have just one licence for the entire Education department. It also allows teachers and administrative staff to use that Microsoft® software on their home computers as well’ (Parliament of Tasmania 1999: 44).

At the same Estimates Committee hearing, responding to a question concerning the cost of the license, the Tasmanian Secretary of Education stated: ‘the general costing for all the Microsoft® suite of software is about $86 per machine per year’ (Parliament of Tasmania 1999: 46). The Minister also indicated that ‘we have now approximately 9,000 computers in school classrooms’ (Parliament of Tasmania 1999: 41). The length of the agreement is implied on the Tasmanian Department of Education Corporate Services webpage where it indicates that ‘in 1999 the annual fee of $86 per Pentium was met centrally. In years 2000 and 2001 schools need to plan to contribute $60 per Pentium annually. The remaining $26 is funded centrally’ (Department of Education (Tasmania) 2001b: 1). With 9,000 computers and a cost of $86 per machine for a license, this represents an annual cost of $774,000 to the government of Tasmania.
Victoria
In Victoria, DEET has a contract with Microsoft® Corporation which ‘provides a wide range of software to schools’ (Government of Victoria 2000: 249). The costs for funding Microsoft® licenses to DEET (Victoria) were provided in the 2000-01 Treasury Budget Papers: Specific policy initiatives. Appendix B (Government of Victoria 2000). Here it is indicated that $4.5 million is allocated in 2000-01, $5.1 million was allocated for 2001-02, $5.8 million was allocated in 2002-03 and $6.5 million was allocated in 2003-04 for the payment of Microsoft® licenses. This implies a four-year licence agreement (Government of Victoria 2000). These Budget Papers also indicate that ‘this funding enables continuation of the DEET licensing agreement with Microsoft’ (Government of Victoria 2000: 249).

Western Australia
In 1999, the Education Department in Western Australia signed a ‘Microsoft Software Enterprise Agreement’ which ‘came into effect at the commencement of term 2, 1999’ (EDWA 1999b: 3). This licence extends to the middle of 2002 (EDWA 1999c). Based on a press release from the (then) Minister of Education, it was reported in The Australian that ‘the $5 million contract gives the Education Department of Western Australia (EDWA) universal access to a non-perpetual licence to run Internet and Office applications over the next three years’ (Henderson 1999: 44).

National Summary
It can be seen from these state and territory summaries that the recurrent costs to the respective Australian governments (excluding the Northern Territory), are in the vicinity of $23 million per annum. Another way to consider the possible costs for Microsoft® licences across Australia is to use ABS school students’ enrolment data for 2001 and project the likely costs. This is demonstrated on a state by state basis in Table Three, (over the page).

Plotting enrolment data against the computer to student ratios claimed by each state and territory, makes it possible for an educated guess to be made
of the total number of licences that are required across Australia. For example, in 2000 there was a total of just over 2.2 million students enrolled in the government sector in Australia (ABS 2001a). At an average cost of $86 per machine per year, and using an aggregated total of each state and territory’s stated computer to student ratios, this equates to $29.54 million per year in Microsoft® licences, (if each year were the same as 2000 in regard to enrolments, and computer to student ratios).

### Table Three: Summary of estimated costs of Microsoft® licenses

<table>
<thead>
<tr>
<th>States &amp; Territories</th>
<th>ABS (2001) recorded number of enrolments in government schools in 2000</th>
<th>Computer to Student ratios claimed by state and territory education departments</th>
<th>Projected cost of Microsoft® software based on $86 per machine per annum</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>38,401</td>
<td>1: 4.7 (ACT DECS 2000b)</td>
<td>$702,656</td>
</tr>
<tr>
<td>NSW</td>
<td>759,623</td>
<td>1: 8 (NSW Treasury 2001a)</td>
<td>$8.165 million</td>
</tr>
<tr>
<td>NT</td>
<td>28,925</td>
<td>1: 10 (NT Treasury 2001)</td>
<td>No contract with Microsoft®</td>
</tr>
<tr>
<td>QLD</td>
<td>430,402</td>
<td>1: 7.5 reducing to 1: 5 (Queensland Government 2000)</td>
<td>$4.935 million</td>
</tr>
<tr>
<td>SA</td>
<td>174,177</td>
<td>1: 5 (Government of SA 2001b)</td>
<td>$2.99 million</td>
</tr>
<tr>
<td>TAS</td>
<td>62,803</td>
<td>1: 5 (DofE (TAS) 2001c)</td>
<td>$1.08 million</td>
</tr>
<tr>
<td>VIC</td>
<td>528,189</td>
<td>1: 5 (Department of Treasury and Finance (VIC) 2001)</td>
<td>$9.08 million</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2,248,287</td>
<td></td>
<td>$29.54 million</td>
</tr>
</tbody>
</table>
A more conservative estimate would be to take the ABS (2001a) enrolment figure of 2.2 million students attending government schools in Australia, and use a 1:10 computer to student ratio to calculate the potential costs of system-wide Microsoft® licences. At a cost of $86 per machine per year, this would equate to $19.33 million per year. With the aim of governments to achieve a student to computer ratio of one computer to every five students, this would represent a cost of $38.67 million per annum for Microsoft® licences. It should be borne in mind however, that as Microsoft® Corporation negotiates the commercial-in-confidence contracts with each state and territory individually, some states are able to negotiate better arrangements than others. Therefore, these figures should be taken as illustrative rather than absolute. Irrespective of this however, the general point remains, that Microsoft® Corporation currently has a line of funding from each state and the Australian Capital Territory for the public schooling sectors of several millions of dollars per annum, that for the foreseeable future will be a recurrent line of funding.

**Character Or Author?**

The story of the use of Microsoft® products in Australian schools have two major participants: one is the Microsoft® Corporation and the other is the State, represented through the respective schooling systems of the states and territories of Australia. It has been argued earlier in this chapter that public policies, authored by officers on behalf of the State, gain their authorisation through the authority of the State. In the story being told in this section, the roles of the author of public policies and characters within public policies are blurred.

In this story, while the Microsoft® Corporation would ordinarily be considered a character and the State the author, here the Microsoft® Corporation is being considered as an author of the story, along with the respective states and territory government departments. The Microsoft® Corporation is a robust author with hegemonic powers, which sees Microsoft’s® products legitimated and authorised through the State
apparatus. This brings together the powerful legitimating forces of the legal, political and bureaucratic institutions required for the provision of public schooling in Australia, with the market dominance of the Microsoft® Corporation. A brief synopsis about this author follows.

**Microsoft® Corporation**

Microsoft® Corporation was co-founded by William H Gates III and Paul Allen in 1975. It is a multi-national company. According to the NASDAQ on 30 January 2002, Microsoft® Corporation share prices were hovering in the vicinity of $62.85 (NASDAQ 2002a) with a total share holding of 2,585,928,379 (NASDAQ 2002b). William (Bill) Gates is the richest person in the world with a net worth of approximately $58 billion (Forbes 2001). Bill Gates’ net worth is more than the Gross Domestic Products of New Zealand or the Czech Republic or Hungary or Iceland (OECD 2001). Microsoft® Corporation reported revenue of $7.74 billion for the quarter that ended 31 December 2001 (Microsoft Corporation 2002).

Microsoft Corporation is a hardware, operating systems and software applications developer and a vendor. As will be demonstrated shortly, it is the largest commercial software developer in the world. Microsoft® Corporation also provides training through a range of programs including the Authorised Academic Training Program and the Microsoft® Certified Systems Engineer program. To support these programs Microsoft® Corporation has developed Microsoft® Official Curriculum courseware and Microsoft® certified examinations (Microsoft® 1998).

Periodically during the 1990’s and most recently since 1999, the government of the United States of America as the plaintiff within the District Court of Columbia has made several charges concerning Microsoft’s® alleged monopoly position in the software market. This has included the charge that Microsoft® (Defendant) ‘has waged an unlawful campaign in defense of its monopoly position in the market for operating systems designed to run on Intel-compatible personal computers (“PCs”)’
(Jackson, T.F. 2000: 1). According to the Conclusions of Law from the United States of America (Plaintiff) in this trial, Microsoft’s share of the worldwide market for Intel-compatible PC operating systems currently exceeds ninety-five percent, and the firm’s share would stand well above eighty percent even if the Mac OS were included in the market. Together, the proof of dominant market share and the existence of a substantial barrier to effective entry create the presumption that Microsoft enjoys monopoly power (Jackson, T.F. 2000: 2).

Therefore, due to its size, coverage and behaviour in the global marketplace, Microsoft Corporation has been labelled as a monopoly (Jackson 2000). Judge Jackson, in his Conclusion of Law defined monopoly power to be ‘the power to control prices or exclude competition’ (Jackson, T. F. 2000: 2). According to Section 2 of the Sherman Antitrust Act in the United States of America it is unlawful for a person or a company to monopolise ‘any part of the trade or commerce among several States, or with foreign nations’ (Jackson, T.F. 2000: 2). Microsoft Corporation vigorously appealed the Court’s decisions in this trial, however the United States Court of Appeals upheld the finding that Microsoft Corporation used its market dominance to maintain a monopolistic position in PC operating system software. During 2001, Microsoft Corporation again continued to defend its position against the Federal prosecutors in the United States Justice Department. In November 2001 a controversial settlement was agreed upon between the United States Government and Microsoft Corporation (F2 Network 2001). In this negotiated settlement, some argue that Microsoft Corporation continues to maintain its monopoly power in the marketplace, and thus the software marketplace arguably remains uncompetitive (cf F2 Network 2001; Smith, J. 2001). As such, the contesting of Microsoft Corporation’s use of monopoly power in the software marketplace continues.
Considering Microsoft Corporation as a monopoly or even as an oligopoly, where an oligopoly can be considered to denote ‘the condition of a market in which a small number of firms control a large portion of production’ (Scruton 1982: 333), means that Microsoft Corporation has considerable negotiating power in the marketplace. Trevor Barr (2000), in making observations about the Australian oligopolies in media ownership, observed that the dangers of such high levels of concentration of oligopolistic ownership can lead to ‘potential abuse of power; loss of diversity of expression; [and] conflict of interest’ (Barr 2000: 6). Alongside of its multi-national market reach, Microsoft Corporation conducts marketing where, as McQueen (1998) observes, Microsoft Corporation is presented ‘as a metaphor for the future’ (McQueen 1998: 118). Whether Microsoft Corporation is considered as a monopoly or an oligopoly or a metaphor for the future, Australia’s education departments have been negotiating with a very large and powerful corporate operator. This makes the ability of government departments to negotiate on an equal basis or on a competitive basis, very difficult. That is, the ability of officers in government departments and Ministers of the Crown to author their stories which comprise public policies in this context is problematic, as Microsoft Corporation has the power and arguably the authority to author its own stories about the use of its products within the public sector.

**Constructing And Maintaining Hegemonic Relationships**

It is being argued here that the legal relationship that exists between Microsoft Corporation and the respective Australian states and territories schooling systems mutually maintains and reinforces the monopolistic, or at best, oligopolistic position of Microsoft Corporation and hence its hegemony over the schooling systems, while at the same time it is reinforcing the hegemonic role of schools. It will be argued that the strength of Microsoft Corporation in this relationship is demonstrated through its ability to gain a commonsense (Gramsci 1971) about the necessity of its products, to gain common sets of agreements about the nature of the products each state and territory accepts, and in the similarity
of the conditions that apply to the use of these products. Governments demonstrate their complicitness to Microsoft® Corporation by signing the contracts and paying the money; accepting the grants for incorporating ‘Microsoft® curriculum’ into schools’; using a shared language that demonstrates an homogenisation of the public messages provided, and thereby furthering the commonsense of the relationship. This is occurring irrespective of the respective Australian states and the Australian Capital Territory’s proclaimed uniqueness, and raises the question, ‘is Microsoft® Corporation authoring public schooling policies?’

Legitimating And Authorising Microsoft® Products Through The State

Microsoft® Corporation has been able to move into a position within the schooling sector, where there is an assumed ubiquitous requirement for the use of Microsoft® products. This position is reinforced by achieving a common view across the states and territories that maintains the interests of Microsoft® Corporation, and is enforced through the ruling noted in more than one of the states that adherence to the Microsoft® agreement is mandatory for all schools (DETE (South Australia) 1999h; Parliament of Queensland 1999).

Although the Australian states and territories schooling systems have traditionally maintained their uniqueness (as outlined in the Chapter Four), there is a high degree of commonality between each of the states and the Australian Capital Territory’s licence agreements with Microsoft® Corporation. This is demonstrated here through the product list covered by each agreement; the conditions of use of the software covered under the agreement; and the public discourse used to talk about the agreements. Given the extent of the examples upon which to draw, presented here are selected examples only, that are indicative of the commonality of characteristics that have emerged from seeking an understanding of each state and the Australian Capital Territory’s public information concerning the state-wide Microsoft® agreements.
**Product List**

In each state and the Australian Capital Territory the Microsoft® licence agreement buys a suite of software products. In 1998 (for example) the Australian Capital Territory government stated that the Microsoft® licence provided to schools covered ‘all Microsoft® software, excluding games. … This includes “Front Office software” (eg Word, Excel, Mail) and “Back Office software” (server operating system)’ (Australian Capital Territory DECS 1998: 2). In Western Australia, when notifying schools that the department of education had signed a contract with Microsoft® Corporation, the department stated that this agreement provided ‘workstation and server software in schools, district offices and central office’ (EDWA 1999b: 1).

The software covered in the product list of the Microsoft® agreements is the same for every state and the Australian Capital Territory, and the information supplied to schools by the respective government departments about the product list are almost identical in content, formatting and intention. The following summary of goods covered by the Microsoft® licence, were outlined in a letter in April 1999, addressed to principals and district directors in Western Australia. The letter explains the nature of the software covered by the licence.

The licence will cover the use of:

32 bit operating system upgrades including Windows 95, Windows 98, NT Workstation (base operating systems still need to be purchased when computer hardware is acquired); Office Professional or Works; Back Office Client Access Licences; Internet Explorer; Outlook Express; Front Page; Publisher; and Encarta 99 Reference Suite or Visual Studio Professional

Where applicable, these products may also be used on Apple Macintosh workstations. All schools will also have
access to the Windows NT™ server operating system (Mance 1999: 1, emphasis in the original).

In a letter that varied by only a few words to that of the Western Australian letter, the Chief Executive of DETE (South Australia) wrote to Principals, Preschool Directors and Corporate Board members. In this letter he stated that

the agreement provides the following set of products for use on all curriculum and administration workstations, regardless of current licensing arrangements.

Microsoft® Windows Operating System Upgrades, Windows 98 or Windows NT 4.0 Workstation (When new hardware is acquired, base operating systems still need to be purchased. The agreement allows upgrades on workstations which have existing operating systems.)

Microsoft Office Professional 98 and 2000 (Word, Excel, Powerpoint, Outlook, Access); and or MS Works

Microsoft Office 98 for Macintosh

BackOffice Client Access Licences

Front Page

Encarta 99 Reference Suite or Visual Studio

Microsoft Press electronic books - online training materials (Spring 1999: 1, emphasis in the original).

Each of the other Australian states and the Australian Capital Territory’s product lists covered under the licence agreements are very similar, if not the same as the South Australian and Western Australian software coverage. Indeed, in the Western Australian and South Australian letters even the emphasis by ‘bolding’ the word ‘or’ in each list is maintained in both letters to schools. This raises the question, ‘who is authoring the letters?’
As the product list each state and the Australian Capital Territory have agreed to purchase are almost identical, it may be that nationally there is a high level of consistency about the software requirements of each schooling system. Alternatively, or in addition, Microsoft Corporation was only willing to broker a similar contract with each of the schooling systems. The language of the documentation used by each of the schooling systems is highly consistent, to the point of ‘word for word’ in some cases. Since there is this level of similarity in the nature of the documentation that each state and territory has released, and given the proclaimed unique nature of each state, this raises the question of authorship: ‘who wrote the information intended for public use and thereby the wording for public policy?’

This ‘unique’ nature of the respective states and territory’s product lists has been reported upon and publicised by the schooling sectors. Each respective state and territory has claimed that its licence has been specifically developed for its state's unique circumstances. The (then) Acting Deputy Director General of Western Australia, commenting on how the products would meet the particular demands of the state, announced that ‘the Department has built on the past purchasing trends that schools have demonstrated for a core set of Microsoft® products and consolidated them into a statewide enterprise licence with Microsoft’ (Mance 1999: 1). The Minister of Education in Tasmania, in describing the arrangements under the Microsoft® agreement to a House of Assembly Estimates Committee hearing, stated that it had ‘been tailored specifically to meet the needs of the Education department so it is unique in that respect’ (Parliament of Tasmania 1999: 46). The (then) Queensland Minister of Education stated in a media release that ‘in order to ensure the best possible pricing and access to current software we have negotiated a custom agreement’ (Wells, 1999b: 1). It is ironic and indicative of the market strength of Microsoft Corporation that a cost of $86 per computer has been reported beyond the borders of Queensland (cf Department of
Education (Tasmania) 2001b), and the contracts developed are proclaimed to be reflective of each state’s uniqueness.

It may be that the Microsoft® Corporation was aware of the tradition of the perceived uniqueness of each of the states and territories, when negotiating the licences with them. Certainly the Ministers of Education have been keen to promote to the public and school communities, the unique aspect of the product list covered by the respective licensing agreements, albeit that the uniqueness here seems to have been more a myth than a reality.

**Characteristic Conditions Of The State-Wide Microsoft® Licences**

There are many common characteristics concerning the conditions for use of the state-wide agreements. These are not unique to each state and territory. Two of these are outlined here: home usage by teachers of the Microsoft® software, and the extent of coverage provided by the agreements. Again these are indicative rather than exhaustive examples, but they demonstrate the ways that the Microsoft® Corporation works to maintain its hegemonic relationships and its monopoly.

**Home usage**

Home usage of the software covered under the licence is a common feature amongst all of the states’ and the Australian Capital Territory’s agreements. A letter from the South Australian Chief Executive states, ‘a significant component of this agreement is that all teaching and administration staff of DETE [Department of Education, Training and Employment] will be able to use the workstation products at home for work-related purposes’ (Spring 1999: 1, emphasis in the original). Likewise, the (then) Queensland Minister of Education Honourable Dean Wells released a Ministerial Media Statement, which in part said that ‘an innovative feature of the agreement is the permission for classroom teachers to use Microsoft® software for work-related purposes on the home computer’ (Wells 1999b: 1).
The condition of availability of Microsoft® software for home usage by teachers can be considered as a benefit of the licensing agreement, however it is important to recall comments by Marginson (1997), Williams (1980) and Apple (1982b) that ‘hegemony doesn’t simply come about; it must be worked for in particular sites like the family, the workplace, the political sphere, and the school’ (Apple 1982b: 18). The condition in the contract that allows for ‘home usage’ by teachers is interpreted here to be indicative of one of the ways in which Microsoft® Corporation is able to work at maintaining its hegemonic relationships.

Furthermore, this condition of allowing the use of Microsoft® products at home feeds the belief that Microsoft® products are ubiquitous and therefore strategically extends Microsoft® Corporation’s reach into the home. This perhaps is a more comprehensive way of encouraging the use of Microsoft® products, as it involves providing software to a whole cohort of teachers with the assistance of the State, rather than to see market forces acting on idiosyncratic individual agents. This reflects the dominance of Microsoft® Corporation, and the use of the authority of education systems to potentially increase the reach of Microsoft’s® products beyond schools.

Software coverage
Another consistent condition within the ‘whole of department’ statewide licences appears to be that they do not cover the licences required for the original operating systems to make the computers work in the first place. The Western Australian product list indicates this stating that ‘base operating systems still need to be purchased when computer hardware is acquired’ (Mance 1999: 1). This is also stated in the South Australian letter which states that ‘when new hardware is acquired, base operating systems still need to be purchased. The agreement allows upgrades on workstations which have existing operating systems’ (Spring 1999: 1). This means that when new hardware is purchased, the operating system software also has to be purchased, since the state-wide Microsoft® software licence only covers
upgrades. That is, existing computers require operating systems before the Microsoft® licence applies.

Some states (if not all) have had previous agreements with Microsoft® Corporation that are remaining in place in addition to the state-wide Microsoft® agreements. This is raised in several states’ documentation. A letter to Western Australian schools states that ‘the Microsoft® Select 4 Agreement will still apply to other Microsoft® products that are not included in the enterprise licence set’ (EDWA 1999c: 1). In South Australia, a letter to schools stated that ‘the Microsoft® Select 4 Agreement will still apply to other Microsoft® products that are not included in the new agreement’ (Spring 1999: 2). The Tasmanian Department of Education refers to the Education Select Agreement stating ‘schools that have additional servers can still purchase NT Server licences at $168 each through the Education Select Agreement’ (Department of Education, (Tasmania) 2001c: 1). It seems from these statements that schools and the respective Departments are still required by Microsoft® to cover the costs and maintain the paperwork applying to previous licences in addition to those records required under the new licensing agreement.

The Language
While each state and territory’s product list is very similar, so too is the language used to describe the conditions of use associated with the licensing agreements. The following section highlights some of these commonalities. It is important to look at the language used because it is through these constructions that the narratives are told.

The deals
The language surrounding the signing of the contracts with Microsoft® Corporation regularly has included the use of the term ‘deal’ to describe the arrangement. For example the title of the media release authored by the (then) Queensland Minister of Education was ‘schools and teachers save in deal with Microsoft’ (Wells 1999b: 1). One of the political operatives participating in this research project stated, ‘I just announced on the
weekend the fact we’ve just brokered a deal with Microsoft’ (BX 21 July 1999: lines 521-522); and the newspaper The Australian covered the signing of the Western Australian contract by titling the article ‘Microsoft deal gives schools a licence to surf’ (Henderson 1999: 44). Reflecting on what the term ‘deal’ means in these circumstances, it is salutary to refer to the Shorter Oxford English Dictionary, where a ‘deal’ is defined as ‘a secret arrangement in commerce or politics entered into by parties for their mutual benefit’ (Little, Onions and Friedrichsen 1973: 494).

The use of the term ‘deal’ then, is somewhat apt. Indeed, the fact that the licence agreements have and are subject to ‘commercial-in-confidence’ requirements seems to be something also common across each of the states and territories, as noted in an Estimates hearing in Tasmania where the (then) Director of the Information Management Branch, in response to the question ‘can you get the cost on that licence?’ stated ‘I think that it is probably covered by commercial-in-confidence at the moment’ (Parliament of Tasmania 1999: 45). Likewise, the (then) Minister of Education in Queensland stated in a Parliamentary Estimates Committee hearing, in relation to the processes used leading up to the signing of the Microsoft® licence, that ‘legal doctrines like privity of contract apply and there is … in those commercial circumstances a limitation to the extent to which widespread consultation can take place’ (Parliament of Queensland 1999: 483).

The commercial-in-confidence nature of the Microsoft® agreement in some states has led to teacher concerns about whether the contract really is as good as it sounds. This was most strongly articulated in Queensland where the Queensland Teacher Union placed a boycott on Microsoft® products, partly due to the perceived lack of consultation with teachers by the education department, and because it was believed that the agreement purchased Microsoft® goods that were not seen as necessary in schools (Parliament of Queensland 1999). Given the states are each purchasing a licence to cover many thousands of computers, there is the question of how
many Encarta ‘99 CD ROMs or Visual Studio Professional packages are really required by any given state. It appears then, that irrespective of the difficulties for politicians concerning the public policy management of large commercial contracts, they have been willing to accept these difficulties, in the apparent belief of the greater good being served through signing their respective Microsoft® agreements.

To take a brief aside for a moment to consider the use of encyclopaedia in schooling: encyclopaedia are the places to which students go to ascertain facts and where the information presented is assumed to be ‘true’. The Encarta encyclopaedia set, like Funk and Wagnall, is owned by Microsoft® Corporation. According to McQueen (1998) drawing on an article in Nation (1997), when Microsoft® Corporation bought the Funk and Wagnall encyclopaedia set, ‘the entry on Bill Gates’ was changed from describing him as ruthless to “known for his personal and corporate contributions to charity”’ (McQueen 1998: 118). Bill Gates desire to be seen not only as the world’s richest person but also as a philanthropist was related in a Reuters article reproduced in the Weekend Australian (2001), which stated that the world’s richest man, Microsoft Corporation chairman Bill Gates visited a high school this week to donate $US1.1 million ($AUS 2 million) worth of computers and software …. Mr Gates’ software empire has put him at the top of Forbes magazine’s list of the world’s wealthiest people. He has been keen to be seen as philanthropic as a balance (Reuters 2001: 16).

This demonstrates the necessity to teach students to question that which they assume to be factual and truthful, rather than to simply accept such information as incontestable.

**Other Associated Microsoft® Initiatives**

Microsoft® Corporation works at maintaining and extending its market reach in schools, and it is argued that this is hegemonically maintained by using mechanisms that go beyond the licence agreements signed. The following examples serve to illustrate this.
In the Australian Capital Territory on 25 May 2000, the (then) Chief Minister circulated a media release titled \textit{$300,000$ investment by Microsoft for enhancing information technology skills in Australian Capital Territory education sector}. In part it stated

Microsoft will invest $300,000 over three years for the delivery of IT industry accredited training to students at government and non-government high schools, CIT [Canberra Institute of Technology], ANU [Australian National University], University of Canberra and the Australian Defence Force Academy. … the investment was being made under Microsoft’s Authorised Academic Training Provider program (Carnell 2000b: 1).

In Queensland in 1999 the (then) Minister of Education stated ‘Education Queensland would include ‘Microsoft curriculum’ in its school programs. The software firm would subsidise the Microsoft® Training Authorised Academic Program to a value of almost $100,000’ (Australian Associated Press (AAP) 1999: 46). In October 2000, the (then) Western Australian Minister for Works, Services, Citizenship and Multicultural Interests put out a media statement titled \textit{Home-based computer program to bridge technology divide}. In this statement the Minister announced that the Education Department of Western Australia and Contract Management Services (CAMS) were working on a new program called \textit{Schools@Home}. The Minister stated that ‘he was pleased that CAMS – working with the Education Department and computer giant Microsoft – was contributing expertise, physical resources and funding of $266,000 to the \textit{Schools@Home Project}’ (Johnson 2000: 1).

It emerged through the research conversations conducted with people drawn from the private sector, that supporting the professional development of teachers and others, and increasing the extent of use of Microsoft® products is important to the continuing growth of the Microsoft® business. This provides another perspective on how schools are
viewed as markets and the achievement of a dominant position is worked at and maintained, using the social institution of the school. As one of the private sector participants in this research observed, professional development of teachers is important to vendors such as Microsoft Corporation because

if people make the investment to buy software and then they don’t use it they’re not going to want to re-buy the next version or the next upgrade, because they can’t see the benefit in the stuff they’ve already bought. And if they’re not using it and they’ve already paid for it, then why do I want to go and pay for the next version or the one after that because I am still not using the one that I had before. And so that’s a big issue for [Microsoft®] (ST 22 August 1999: lines 627-638).

This view is one that perhaps is not obvious or consciously recognised by those officers involved in the negotiations with the Microsoft Corporation, and brings into sharper focus Michael Apple’s (1982b) observations that ‘a fundamental problem facing us is the way in which systems of domination and exploitation persist and reproduce themselves without being consciously recognised by the people involved’ (Apple, 1982b: 13). This observation was highlighted through one of the research conversations conducted with a political operative. She was commenting upon using the funding for digital technologies to produce a ‘leverage effect’ from the schooling system into other parts of the state economy. Having related this, then the irony struck her about recently signing a contract on behalf of the education department, with Microsoft Corporation. What follows are the political operative’s observations about this.

You know the biggest, the biggest company in the world, [is] to supply software to schools at a much cheaper rate. Instead of paying $350 per computer, we’ve got a bulk software purchasing agreement which will bring it down to $86 per computer, and we’re sharing that cost between the central department and the schools. So schools’ll only pay about $60 per computer. And they’ll get the
whole Microsoft Office suite of software, you know, operational Windows stuff, Word, web publishing, desktop publishing, spreadsheets, databases, basically all the computer basic stuff they need, for a substantial, substantially reduced cost. …. We buy the computers, but as part of their [schools] grant they buy software from that. So, it’s a bit of a Catch 22, ‘cause, you know, I guess that’s one we’ve sort of been forced into, because you know we don’t have somewhere, somebody in [the state of Australia], who produces that software and of course you know, ultimately that was one of the questions the journalist asked. …. But I think where possible we do try and have it so that it does have multi benefits in terms of this state. So it’s got the benefits of keeping our students up to date, having everything that we need in the schools, and having the flow on effect (BX 21 July 1999: lines 525-551).

This extract demonstrates that the political operative, although cognisant of wanting to use locally developed software, perceived that there really was not any other choice and therefore felt forced to use Microsoft® software. It could be argued that this is the case with the various Ministers signing contracts with Microsoft® Corporation.

Therefore in addition to the software contractual arrangements, Microsoft® Corporation has extended its interests in schools by supporting the teaching of ‘Microsoft curriculum’, with the state education Ministers’ active support, and actively supported programs that enhance Microsoft® Corporation’s reach into the home. As Apple (1982b) points out however, ‘these purposeful, reasoning, and well-intentioned actors, may be latently serving ideological functions at the same moment that they are seeking to alleviate some of the problems facing individual students and others’ (Apple 1982b: 13). This seems to be the case here, where the Ministers of Education, in aiming to reduce the costs of software to schools (DETE (South Australia) 1999e; EDWA 1999b Wells 1999b), instead are operating to maintain and further the dominant ideologies of the Microsoft®
Corporation. The State is thus complicit in maintaining Microsoft’s®
hegemony.

Two Powerful Forces - Microsoft® And The State
It has been argued earlier that Microsoft® Corporation is either a monopoly or an oligopoly, and either label implies considerable corporate power. The Australian schooling systems in this case are Microsoft’s® markets. Alongside of the recognition of Microsoft® Corporation as a monopoly or an oligopoly, and that the markets under discussion here are the public schooling systems in the Australian states and territories, it must also be recognised that consent by each state and territory has been provided to this arrangement. There is a willingly acceptance of the dominance of Microsoft® Corporation. It is important to recognize this, since as Bourdieu (1977) points out,

an analysis of ideologies in the narrow sense of “legitimating discourses”, which fails to include an analysis of the corresponding institutional mechanisms is liable to be no more than a contribution to the efficiency of those ideologies (Bourdieu 1977: 188-189).

The State (that is each state and territory) has exercised its centralised authority through the signing of the Microsoft® agreements and thereby made their use, public policy. These agreements have required Ministerial signature, which legitimates and in some cases makes mandatory, the use of Microsoft® operating systems and other software. That is, there is the legal enforcement provided to ensure the use of Microsoft® products, provided through the contractual arrangements that have been put in place, and are effective in schools. In addition there is the cultural transmission of knowledge that is the role of schools, which ensures the consent to the use of Microsoft® products. This is achieved through using Microsoft® operating systems and other software, and through the provision of Microsoft® curriculum, assessment and credentialing processes.
This brings two powerful forces together: Microsoft Corporation and the State. The State through the public school education system legitimates the use of Microsoft products and in some cases the use of its curriculum. The use of Microsoft products is thus commonsense (Gramsci 1971).

Matt Welsh, a computer science researcher in the United States of America has noted his concern about the assumed requirement to use Microsoft software products. This was reported in an article by Judith Lewis in 1999 for the Californian magazine, LA Weekly, and verified by Matt Welsh on his personal home page.

I’ve been seeing a large number of research projects in which Microsoft systems such as Windows 95 and Windows NT … are being adopted more and more of the time. …. It started to frighten me when I realized what would happen if one company were dictating the standard way of thinking in science (Lewis 1999: 1).

This concern about leaving as an unsaid assumption the information about how the infrastructure allows computers to run, also was outlined by one of the senior officers from within the private sector who participated in this research.

KM: Do you think it matters who owns the architecture?
AB: It does in terms of who's making the money. Who owns the architecture is often a matter of who's getting all the profit out of this. And is architecture actually shaping the way we think and communicate? And that really does matter. …. Not only are they making the money, they are also putting down ways of thinking. And we have to be very critical. And we have to educate our children to be very critical of this. That they can stand outside such stuff. So who owns the architecture is important because it filters the way we communicate. And I am concerned that that in turn filters the way we think … But all I’m raising the flag is that we need to have a fairly critical understanding of the way technology is not neutral. The way it textures our communication, and it does
texture it. And that’s OK, as long as we’re aware of it, and manoeuvre it and don’t allow it to happen by osmosis (AB 12 July 1999: lines 657-670).

Although this person was not referring directly to Microsoft® Corporation, the point about the implicit nature of the infrastructure required to run digital technologies is important.

If we accept that school populations are being constructed into commodity markets, then students and teachers should be made aware of the implications of choosing one company over another for the supply of particular products. Further, this raises the question about whose knowledge should be preserved or already is being communicated through schools? To allow knowledge to go unexamined hides the social interests it supports and works against the use of social relationships to generate meanings. Christie (1990) states that teachers ‘may fall victim to the myth that Western knowledge is discovered not negotiated, a myth perpetuated at all levels’ (Christie 1990: 2). Instead, it should be acknowledged that knowledge is really a study in ideology linked to socially constructed human interests (Giroux 1981).

It is argued here then, that ideological support for the use of Microsoft® products is actively occurring within the school education systems. Hegemony is functioning therefore ‘to define the meaning and limits of commonsense as well as the form and content of discourse in society’ (Giroux 1981: 94). Giroux (1981) goes on to say that this is achieved by ‘positing certain ideas and routines as natural and universal’ (Giroux 1981: 94). To this end, Microsoft® Corporation is using schools to gain cultural authority in relation to how and what students learn about digital technologies; how students construct and present their learnings, (for example) by using the existing templates or structures that are already included in the software; and how teachers do their work.
Therefore, Microsoft® Corporation exercises its influence through the legal or contractual agreements signed at the government level and through the provision of curriculum, assessment and credentialing services operating outside existing state regulated provisions. Sometimes Microsoft® Corporation charges for these services and in other circumstances, financial contributions to facilitate the use of ‘Microsoft curriculum’ have been provided. Bureaucrats and politicians, through the use of the powers of the State, consent to these processes and resultant relationships.

The Queensland government has ‘grasped the nettle’ making the observation that ‘schools present us with our best opportunity to preserve Australian culture and tradition in the face of growing global cultural hegemony’ (The State of Queensland 2000: 12). In order for schools in Queensland and elsewhere to achieve this though, authorities will be required to critically view and review some of the assumptions upon which schooling has been based. This should include the role Microsoft® Corporation is playing in each of the states and territories departments of education and more generally across government.

In summary then, this story has outlined the nature of the relationship between the State and Microsoft® Corporation, specifically in relation to public schooling in Australia. It has been argued that by extending market relations into the schooling sector, Microsoft® Corporation is helping to consolidate and maintain dominant market position. Given the increasing intervention of the private market into schools, there is a process of legitimating by the State, of products such as those produced by Microsoft® Corporation. This in turn is reinforcing the hegemonic activities of which schools are capable. The legal, political and social institutions of the State therefore have provided authority to these hegemonic forces.

This story raises some questions that require further thought: is this what we want from public education? What are the implications for the future of maintaining these sorts of market relationships using the authority of the
State? What are the counter-hegemonic strategies that are available to the State in settings such as those described in this paper? Are these sorts of arrangements happening elsewhere? In other words, this narrative returns us to the central question for this thesis ‘what does public schooling mean in Australia in the 21st century, with its past tradition of free, compulsory and secular schooling, and given the present public schooling sector policies are urging the ubiquitous use of digital technologies?’

In preparation for drawing some conclusions to this central question of the thesis, consideration of some possible ways of decreasing the level of dependence the states and territories’ schooling systems have on Microsoft® products is undertaken in the next chapter using a process of ‘scenario planning’ drawing on the work of Schwartz (1996). This is in order to propose a reauthoring of the ‘Microsoft® story’.
This chapter uses scenarios or narratives about the future (Schwartz 1996; Georgantzas and Acar 1995) as proposals for refiguring the extent of the contractual obligations the states and territories have to the Microsoft Corporation, and for reauthoring the hegemony exercised by that company. Proposing futures involving the use of digital technologies in schooling is not a straightforward process however, but nonetheless policies are used to make decisions in the present in order to achieve images of the future.

It has been seen that Ricoeur (1984) emphasises a spiral of narrative making, arguing that developing and telling stories is an endless or continuous process; one in which we tell and retell stories, with various purposes in mind. He refers to this as ‘refiguration’, reauthoring or inventing a new plot from the same events leading to different actions (Ricoeur 1984). He argues that we can undertake ‘the work of refiguring praxis through narrative’ (Ricoeur 1988a: 101). Here ‘praxis’ is understood to refer to the relation of theory to practice where praxis means ‘doing’ something or taking action (Popkewitz 1984).

It has been seen throughout this thesis that narratives provide meaning to events and they help to explain why certain circumstances come to pass. Narratives assist in providing a rationale that explains why things are the way they are. Narratives provide a structure and an order to events that otherwise may seem unconnected. They enable authors and readers to consider different issues from a variety of perspectives, and aid in understanding complex situations. In this chapter, narratives through the use of scenario planning provide a mechanism for learning vicariously about ‘what will happen if…?’ As narratives help explain the meaning of why certain arrangements are the way they are, the purpose of this chapter is to
demonstrate that while presently the meaning of public schooling in the 21st century includes the commonsense (Gramsci 1971) necessity of using Microsoft® products, that there are different stories that can be told about this commonsense. To ‘unfix’ the present stories and to tell different stories about preferred futures can show that different outcomes are possible in the provision of public schooling.

**REAUTHORING THE ‘MICROSOFT® STORY’**

It was demonstrated in Chapters One and Five that each state and the ACT has signed a ‘whole of education department’ contract with Microsoft® Corporation. Further, it was argued that Microsoft® Corporation has an hegemonic relationship with the state and territory schooling systems. In Chapter Five it was also argued that commodity markets were starting to characterise the nature of public schooling but that markets are not neutral, nor buyers’ choices unfettered. Advertising and branding of products are deliberately used to influence buyers’ choices. The new ‘religion’ about which public schooling ought to be concerned however, is that of the secular private markets with their primary aim of profits. Instead of the State facilitating a market-based culture, public schooling should have as its primary focus, the best interests of all students where the aim is to achieve democratic social relations, and where there is the promotion of tolerance and respect.

Using the strategic management technique of ‘scenario planning’, this chapter considers possible future narratives. Stories about the future that would enable a less hegemonic relationship between the Australian public schooling systems and the Microsoft® Corporation are constructed. The use of open source code such as that used in Linux software is canvassed. The development of a reauthored story, which cuts across the hegemony of Microsoft® Corporation, may provide ways to consider how Australians can gain more control over their various futures. The process of reauthoring is important because to author a new or replacement story requires us to take an active part in that authorship. We move from characters or actors to
authors. A process of ‘scenario planning’ therefore is undertaken here, drawing on the work of Schwartz (1996) to examine possible ways of decreasing the level of dependence the states and territories’ schooling systems have on Microsoft® products.

The processes of scenario planning can be used to address a wide variety of issues such as changes to teaching and learning, the nature of the curriculum, or to consider administrative changes to the provision of schooling arising from the policy imperative of using digital technologies. Due to constraints of time and space the scenarios proposed here address one specific infrastructure policy issue, that of the provision and maintenance of the back office software used for networking computers. It has been argued throughout this thesis that without the necessary infrastructure to ensure the provision of free, compulsory and secular schooling, none of the other changes proposed will be able to be satisfactorily fulfilled.

**What Is Scenario Planning?**

Scenario planning is grounded in telling stories about possible futures. Scenarios can be considered to be specially constructed stories that help us to make sense of the future in a similar manner to the way historical stories can make sense of the past. In this context, Schwartz (1996) defines ‘scenario’ as follows:

> a tool for ordering one's perceptions about alternative future environments in which one's decisions might be played out. Alternatively: a set of organized ways for us to dream effectively about our own future. Concretely, they resemble a set of stories either written out or more often spoken. However, these stories are built around carefully constructed “plots” that make the significant elements of the world scene stand out boldly (Schwartz 1996: 4).

The process of scenario planning deliberately encourages the development of several alternative but plausible stories to address broadly the same or
similar questions or problems of the future. It therefore allows a multidisciplinary approach to planning for the future. ‘The scenario process provides a context for thinking clearly about the impossibly complex array of factors that affect any decision’ (Schwartz 1996: xiv). The purpose of scenario planning is not to predict the future but instead to demonstrate how different forces can be brought to bear to construct different possible futures. In this way, scenario planning encourages us to imagine different stories or possible scenarios about how we can construct our futures.

A strength of scenario planning is that it fosters the contributions of different perspectives and supports the development of narratives that address those different perspectives with different weightings of importance attached, depending on the scenario. It facilitates the bringing to the surface unsaid assumptions about the future and allows for existing ‘mental models’ to be articulated and challenged. In this way, it can lead to ‘continuous organizational learning about key decisions and priorities’ (Schwartz 1996: xv). The purpose of scenario planning however, is not necessarily to develop accurate stories about the future but to encourage conversations about it, and support the decision making processes affecting possible futures.

Scenario planning is useful where a high level of participation, or a large number of variables or perspectives need to be considered in future strategic planning. It is a method that provides spaces for conversations, and it is a process that pulls together different perspectives into a shared vision (van der Heijdens 1997). It involves ‘taking a step back’ from the day to day issues being faced, in order to reflect upon where things are and where we want them to go. Scenario planning differentiates itself from other strategic planning approaches by recognising the importance of ambiguity and uncertainty in questions of strategy (van der Heijdens 1997).
Using The Process Of Scenario Planning

The process of scenario planning begins by identifying why different narratives or stories are required. This involves identifying and clearly articulating the problems to be addressed (Schwartz 1996). Doing this stimulates the identification of a range of other subsidiary or related questions to be considered. Specifying and exploring the ‘driving forces’, predetermined elements and critical uncertainties that should be considered in the process of developing scenarios, follow identification of the problems.

‘Driving forces’ are the action statements or dramatic momentum that moves ‘the plot of a scenario’ (Schwartz 1996: 101), and helps to determine the story’s outcome. It includes the motives for undertaking certain actions. ‘Driving forces’ are required because without them there can be no scenario; there is no story. Identifying the motives in a story allows for the identification of which factors are more important to address, than others. The identification of ‘driving forces’ also can reveal the presence of deeper, perhaps more fundamental forces behind them. Schwartz (1996) uses a set of categories to help structure the identification of driving forces: ‘society, technology, economics, politics and environment’ (Schwartz 1996: 105). Once identified, the ‘driving forces’ can then be sorted into those that are important and those that are not so important. Recognising the ‘driving forces’ and determining the extent of influence to exert on them is thus possible. Scenarios are then constructed.

The following section provides a summary of the problems to which the processes of scenario planning are to be applied. An identification of the projected driving forces that will provide contexts for the scenarios are outlined, and this is followed with two scenarios that are based upon the educational and economic narratives evident in the policies and budget texts identified in the previous chapter, and one scenario which outlines the maintenance of the status quo.
Why Scenario Planning Is Being Used And Summarising The Problems

The central concern for this thesis has been what public schooling means in Australia in the 21st century, with its past tradition of free, compulsory and secular schooling, and given the present public schooling sector policies, which are urging the ubiquitous use of digital technologies. It has been seen that this is a complex problem. To address this central concern, research conversations have been conducted and a narrative exploration of these and the policies and budget texts of the Australian states and territories public schooling systems that are advocating the widespread use of digital technologies, has been undertaken. Some consistent plots and narratives have emerged from these conversations and texts. In outlining why scenario planning has been undertaken and in summarising ‘the problems’ in preparation for the processes of scenario planning, a reflection of the interpretations of the narratives that have emerged in this study is provided. This is followed by an explanation of the implications of the ‘Microsoft® Story’ before moving into a description of the future ‘driving forces’, which will provide the contextual basis for the scenarios that are to be presented.

Why Use Scenario Planning?

This thesis has used an interpretative approach to the research using narrative theory along with the concept of hegemony. It was argued in Chapter Two that interpretative research assumes that our knowledge of reality is achieved through constructions such as language, discourse and stories (Klein and Myers 1999). Interpretative research focuses upon the complexities of human meaning making and includes the use of stories as a way of achieving understandings and explanations about our past, present and possible futures (cf Carr 1986). Similarly, scenario planning is grounded in telling stories, in this case, about possible futures. Scenarios are specially constructed stories that contribute to our processes of meaning making. This applies to our constructions of possible futures in a manner similar to the way historical stories help us to make sense of the past. Further, it has been argued that stories can contribute to the building of a commonsense (Gramsci 1971) about particular issues by providing legitimacy.
and consent to hegemonic situations. Alternatively, they can be used to frame counter hegemonic scenarios for the future. The purpose of using scenario planning here then, is to help develop counter-hegemonic stories for the future.

Summary of the plots and narratives emerging from the study

This thesis has included a focus upon two narratives, one economic and the other educational, which were in evidence in the research conversations and in the policies and budget texts. Plots identified in the economic narrative included preparing students for the digital technologies labour market and fostering the technological literacy skills required for lifelong learning. Within the educational narrative, it was seen that the plot of developing students who understand both how to use the technologies but also understand the impact of these technologies on society, was canvassed. Other plots included raising the standard of student outcomes from schooling and developing students who are both critical users and producers of the technology. Schooling systems articulate commitments to equity and democracy, and are aiming to become learning organisations where there is continuous improvement. Digital technologies are proposed as one of the contributors to achieving these aims, along with being a mechanism by which governments can resolve the problem of the ‘tyranny of distance’. Underpinning the proposals which represent widespread changes across the public schooling systems however, is the requirement for suitable infrastructure so that universality of access can be assured for those requiring the use of digital technologies.

It has been argued throughout this thesis that without the necessary infrastructure to ensure the provision of free, compulsory and secular schooling, none of the other changes proposed will be able to be fulfilled in a manner consistent with the democratic sentiments of free, compulsory and secular schooling. The advocacy for using digital technologies in schooling has resulted in the widespread use of Microsoft® software and operating systems in public schools and systems in Australia. The provision and
maintenance of Microsoft® back office software is used for networking computers. Back of office software is essential in order to employ the networking and communications functions available through the use of digital technologies. It is asserted here though, that the use of Microsoft® products is being undertaken with little questioning about the implications of the decision to use this software in such a widespread way. Bringing to the fore unsaid assumptions about the implications of uncritically using these products then, is important for the consideration of other possible software arrangements.

Hegemonic relationships
The relationship between the states and territories and Microsoft® was described in the previous chapter as hegemonic. It was argued that this is occurring on several different levels including in relation to the control Microsoft® Corporation exercises over parts of the school curriculum, the infrastructure of computing systems which includes the use of Microsoft® operating systems for personal computers and the software required to run local and wide area networks, and therefore the provision of the training of staff to establish and maintain the infrastructure and of teachers and students in using the software. As the infrastructure being used in Australian schools and systems is based on Microsoft® products, it has been demonstrated that this requires the payment of many millions of dollars per year to maintain the software licences. This makes the State complicit in the hegemonic relationship through the payments made for these licences and the receipt of funds from Microsoft® for the provision of their curriculum and other services. The way things stand at the moment, the software licences will be an ongoing cost to governments. The hegemonic relationship is maintained too, through a sense of inevitability about having to use Microsoft® products, because there is the belief that there is not anything else comparable to use.

The State also maintains an hegemonic relationship between schools and their communities through mandating the use of only Microsoft® products
for certain purposes, the use of Microsoft® curriculum, and the legal enforcement of the conditions of the use of software licences. Microsoft® software is being considered in one state, at the cost of $500,000 per year, for handling online testing of students in basic computer skills such as how to operate a personal computer. As indicated earlier, this testing includes assessing basic skills such as whether a student can turn on the computer, and use the desktop icons such as ‘my computer’ and ‘trash’ (DETE (SA) 2001b).

Curriculum
Consistent with other organisations such as Cisco (cf New South Wales Government 2001), Microsoft® vocational education and training credentials are being introduced into the school curriculum (cf New South Wales Government 2001) and are seen as a credential or a passport to future work. Students, parents and teachers therefore see the credential as valuable. The software itself has a structuring effect on the way an individual thinks about how to undertake a task using Microsoft® software. The software is there and the thinking has to be structured into it. If teachers and students are not aware of this structuring effect, then they cannot be critical thinkers and users of digital technologies. Structuring the provision of schooling including that of vocational education and training within schools on this basis only, does not meet the goals of developing students’ ability for critical thinking, as it requires an unquestioning acceptance of the use of Microsoft® products. Furthermore, the basis of lifelong learning within this model is dependent on the individual having the capital (either financial or social) to access Microsoft® software and training beyond school.

Markets
It was demonstrated in the previous chapter that schools are being constructed as markets where public spaces are being privatised. The branding of Microsoft® products is subliminally occurring throughout schools with the use of the software and through more blatant marketing such as the offering of ‘Microsoft® scholarships’ (Microsoft® 2001c). All of
this feeds Microsoft®’s dominant position in the software marketplace. These conditions serve to maintain Australians as consumers rather than producers of software. In addition, government purchases of commodities have considerable merit to private companies such as the Microsoft® Corporation, as they provide credibility and status to the product, and thereby the company’s product is afforded prestige in the marketplace.

Technical support and training
It was outlined in Chapter One that the language of software is composed of ones and zeros. This language forms the basis of source code, the language of programmers. With open source code programmers can move and change around pieces of code in order to solve problems in the software. This is referred to as ‘hacking’ (Himanen 2001). The use of the term ‘hacking’ in this context sits in contrast to digital vandalism, which also tends to be referred to as ‘hacking’ but more correctly should be referred to as ‘cracking’ (Raymond 2001). Source code in Microsoft® products is closed and not open to reauthoring, unless it is ‘cracked’, or if the consumer pays a fee to the Microsoft® Corporation. Bob Young (2001) sees this as problematic both from a technical and ideological point of view stating that by ‘legally restricting access to knowledge of the infrastructure [source code] that our society increasingly relies on (via the propriety binary-only software licences our industry historically has used) results in less freedom and slower innovation’ (Young 2001: x).

With the widespread use of digital technologies and therefore Microsoft® products in schools, training of technical staff to use Microsoft® software is essential. This feeds Microsoft® Corporation’s dominance. While the use of all software requires training, Microsoft® training is only about their products. This is not unreasonable for a vendor to do. It is the view of this author, that it is unreasonable however, for a public schooling system to outsource its responsibility for the provision of its fundamental educational experiences about digital technologies to private companies such as Microsoft® Corporation. Such an approach guarantees that the deeper, more
critical questions about the philosophy and principles underpinning the construction and use of software are not addressed. Private companies such as the Microsoft Corporation attend to the technical skills development required to use their products and avoid addressing serious complexities and controversies that might run contrary to their company’s interests. As such, it is the proper role of public schools and systems to address the problematic social and cultural issues that are attendant with the use of digital technologies.

Since Microsoft’s source code is closed, staff and students only require training in how to use already structured, closed software systems. This means that they are constructed as ‘users’ rather than ‘producers’ of software. Solving problems in this context is one of troubleshooting within these closed systems. There is no generation or creation of new software or innovative solutions based on existing software. It is argued here, that this does not lead to critical, creative or independent thinking about software systems. This model of software supply and maintenance is one that supports the maintenance of an hegemonic relationship between schools and the multinational. It does not provide other alternatives to which school communities can aspire.

The problems
The problems with the widespread use of Microsoft products therefore are as follows. Firstly, Microsoft licences are a recurrent cost to state and territory schooling systems, and to private individuals. At the moment the exercise of the digital lifelong learning skills developed at school is dependent on the ability of individuals to access this software once they leave school. This has the capacity to link lifelong learning skills with levels of available income. This is problematic. Secondly, it has been argued that the relationship is hegemonic and is worked at and maintained by Microsoft. The ways this occurs were discussed in the previous chapter. Thirdly, since Microsoft Corporation exercises a monopolistic or oligopolistic position in the software marketplace, governments in Australia
do not see any other option other than to purchase Microsoft® software, which places them in a weak bargaining position. Fourthly, there is an assumption made that the development of digital technology skills by students so they can enter the workforce requires them to use Microsoft® products. While this is the case for some positions, it is not the case for all and should not be taken as an unquestioned assumption. Industries that have previously used UNIX (for example, the mining medical imaging and defence industries), are moving into using Linux (cf Carrigan 2001; Interactive Network Technologies 2001). Therefore while there is a particular policy motive (rightly or wrongly) to develop students ready for the digital technologies labour market, this is only partially being achieved. Furthermore, learning how to use pre-existing software without also learning the principles underpinning the construction of software is not a mechanism for improving the standards of students’ learning outcomes in using digital technologies. Fifthly, closed software such as that found in Microsoft® products does not allow network managers to use their programming skills to fix idiosyncratic problems, but locks them into centralised management systems with little room for creativity. This reinforces the centralised control of education systems at a time when there are claims that there is devolution of decision making to the local level. This means that network technicians are not striving for continuous improvement of the technical infrastructure of the organisation but are trying to make the status quo work. Students therefore are provided with role models who are conforming to the requirements of pre-packaged software rather than trying to use that software to meet the human requirements of their local work settings.

Having identified these problems, it is now time to consider the action statements or ‘driving forces’ upon which the scenario planning is to be undertaken. In doing so it is worth remembering that the conditions described here, apply to only one, albeit large government department in each state and territory; that of Departments of Education responsible for the provision of public schooling. For the governments within Australia at the
commonwealth, state and local levels, this issue is likely to be broader than this one public sector however.

Driving Forces
Schwartz (1996) asserts that in using scenario planning it is necessary to identify the likely driving forces or plots, and suggests the use of the headings of society, technology, economics, politics, and environment. As the scenarios being proposed here are intended for consideration within the environment of the public schooling sector, the ‘environment’ category is interpreted to mean the public school education environment. The following section then provides a summary of the ‘driving forces’ or plots, which are seen by this researcher. These five driving forces provide a basis upon which the scenario planning processes are then undertaken.

Society
There are a number of projections seen by this researcher that could be posited about society generally, during the first decade of the 21st century. It is proposed here however, that society will continue to be polarised on the basis of wealth, and on the basis of urban or remote location. There will be disparities between the ‘information rich’ and the ‘information poor’, which will reflect the same disparities that currently exist in Australia concerning wealth distribution. There will be pressure on schools to address the disparities identified between the ‘information rich’ and the ‘information poor’. Private access to the Internet from home will continue to increase and peak at about 80% of the population. Schools will become the safety net for the 20% who do not have home access to the Internet.

Policy makers in the public sector will continue to struggle with how to ensure the necessary bandwidth to communities and their schools within the deregulated telecommunications legislative and regulatory framework. Governments will struggle to provide legislative responses to issues such as pornography and gambling on the Internet. All current legislative responses will fail.
Public school environment

Several propositions for the driving forces in the public school environment are seen by this researcher and include the following. The majority of students in public schools will have developed skills in how to use digital technologies at home. A minority of students will come to school without skills in using digital technologies. Public school education policies will continue to advocate that students and employees should be critical and creative users and developers of digital technologies. Governments around Australia will actively support lifelong education. Developing citizens who can participate in communities both online and in real time will continue to be proposed. Schools will play their part in this by establishing programs that support students and teachers undertaking collaborative activities online. Central policies will continue to advocate decentralised management of schools.

Teachers in schools will develop programs that recognise the skills in using digital technologies that students bring with them to the classroom. Policy makers and school principals will recognise that teachers require ongoing, high quality and consistent professional development to help them support the students in their classes to continue to develop their skills in using digital technologies in creative ways. Outside of lessons, teachers will communicate with most of their students and their parents using email in addition to personal methods such as through the use of the telephone and ‘face to face’ meetings.

Schools will be the location for communities, and especially poorer communities, to be able to access and use digital technologies. This will be a policy response by governments to the crisis of differential access to government online services arising from the differences between those who are ‘information rich’ and those who are ‘information poor’. These schools will probably house the largest local area network (LAN) in the vicinity.
Retention rates to year twelve in public schools will start to rise and will peak at between 85% and 90% of the student population. There will be variations in this retention rate between those in metropolitan locations and those located in rural, remote and isolated locations, with lower retention rates to year twelve recorded the further away from metropolitan locations the schools are situated. At the same time there will be an Australia wide teacher shortage. The increase in public school retention rates will require an increase in the number of teachers employed in the public sector, and there will be pressure on the existing physical infrastructure of school buildings to accommodate the increased number of students staying at school. To accommodate these pressures, teaching and learning in all schools will become a mixture of online distance education and ‘face to face’ schooling.

There will be several continuing tensions concerning the provision of public schooling. These will include the tension between the financial demands of providing public schooling that is based upon sound pedagogical approaches and has the best interests of students at its heart, with the restraints of limited funding available which will curb the numbers of staff required and the maintenance and upgrading of facilities. Consequently the number of students in a class will continue to be a problematic issue for public schools and for governments.

There will continue to be tensions concerning the levels of funding provided for private schools in comparison to public schools according to the commonwealth enrolment benchmark adjustment formulae. There will be continuing tensions about what is understood by the terms ‘democracy’ and ‘equity’. One interpretation of their meanings will continue to be based on an neoliberal market model that argues that everyone has the right (irrespective of their ability) to equally and freely choose the nature of the education provision they want, in an environment where market choices in school education will continue to be actively encouraged. Another interpretation of these terms will continue to refer to the democratic social
relations and associated egalitarian practices that see modes of teaching and learning that are solidaristic rather than individualistic and competitive. Some private schools will be seen to be providing a more socially just education than some government schools. Funding to public schools for social justice policies will remain minimal.

Technology
The development of online curriculum will continue to be undertaken at the state, territory and national levels. Software development will continue to be undertaken by private vendors. Australian governments will have policies that articulate that its citizens are becoming producers rather than only consumers of digital technologies while at the same time computer hardware and software will continue to be imported. Major existing contracts with vendors such as Microsoft® Corporation and EDS will come up for re-negotiation.

Public schools will continue to receive out of date hardware from government departments across the public sector. Each cohort of students going through the schooling system will have more sophisticated entry-level skills in using digital technologies than the previous cohort. The Internet will emerge as the most potent tool for organising protests against governments and corporations at the local, national and international levels.

Private companies will maintain and increase their use of products employing open source code. More companies will use Linux and other open source products in preference to Microsoft® products. Microsoft® Corporation will regularly contest the viability of using open source code in software products. Open source products will maintain their superiority in generating reliable software. Microsoft® Corporation will also continue to contest judicial rulings concerning its status as a monopoly. They will do this through political lobbying and through the relevant courts. Research and development will maintain its focus on developing small, portable and
cheap technologies that link to the Internet for use by students in schools. These products will not use Microsoft® software.

Branding of software and hardware will continue to be an important marketing strategy within the school education, digital technologies market. Likewise, major corporations will maintain their marketing strategy of providing selected public schools with free hardware, software, services and specified curriculum offerings. These goods and services will be provided by the corporations in exchange for unlimited publicity opportunities involving members of the school community. Due to ongoing pressures of limited funding provided to public schools, these opportunities will be accepted.

Economics
Australia will remain a country divided on the basis of wealth. School education will remain the second largest budget item in state and territory budgets. The states and territories governments will pressure the commonwealth for the release of increased funding levels collected from the GST. Within the states and territories the budget allocation will continue to be contested, with pressures to keep these budgets ‘balanced’ and ‘cost effective’.

There will be pressure for public school education to act as a social safety net, with those who can afford to send their children to private schools actively encouraged by governments to do so. Official unemployment rates will remain at levels over five percent with those levels being higher in regional, rural and remote locations. Privatisation of telecommunications, and in some states, electricity, will continue to be contentious to the voting public and considered as expensive by private consumers. Globalisation of economies will persist with reducing barriers to international trade and the movement of capital.
Part-time and casual jobs will continue to be the main employment undertaken by students and the place where the majority of employment growth in the labour market will continue to occur. Careers across industry groupings will require students who are technologically literate, and the higher the technical skills the better the income and the wider the employment opportunities available to job seekers.

Politics
For school students, the ongoing degradation of the environment will continue to be the most major concern about which they worry. There will be an increase in small, minor political parties who together will have the capacity to control the balance of power within federal politics and likewise, in varying ways and degrees, in state and territory politics. These small political parties will continue to include the Greens and the Australian Democrats. Conservations groups will band together in loose political alliances on an issue by issue basis. Sporadic physical violence will continue to erupt over issues considered as examples of symbolic violence, such as global warming, human rights violations and the undemocratic control of the flow of capital by multinational companies.

There will be recognition that high level skills requires being able to produce the tools of digital technologies as well as to be able to use them. There will be an accepted role for the government to play in establishing the policy, infrastructure and economic climate suitable for being able to achieve this. There will be an ongoing articulated commitment from both major political parties in Australia, to increasing the skills base of Australians using digital technologies.

Privatisation of the telecommunications and some electricity markets will continue to be a divisive political issue for all levels of government. Employer representative groups and organised labour will agree that the cost of privatised electricity is too expensive. The nature and provision of public schooling will remain a contentious issue for the voting public. All
political parties will continue to articulate their commitment to a
democratic, fair and equitable Australia.

**Some Scenarios**

Given the ‘problems’ identified earlier in this chapter, and the contextual
influences provided through the identification of the ‘driving forces’, some
counter hegemonic scenarios can now be proposed. Schwartz (1996)
suggests the development of no more than four scenarios. A meta-narrative
proposing the use of not-for-profit open source code software is outlined
here, followed by three scenarios. The first two scenarios propose counter-
hegemonic strategies incorporating the use of open source code, and the
third scenario is based upon the maintenance of the status quo.

The scenarios proposed here have been chosen since it has been
demonstrated earlier, that the provision of the infrastructure required for the
use of digital technologies in schools has a central role to play in the
provision of public schooling in the 21st century. In the previous chapter it
was argued that without the necessary infrastructure the use of digital
technologies is impossible. Access to the infrastructure is therefore
necessary to participate in an online world. One part of the infrastructure
requirements is the software required both for operating systems and for
undertaking specific activities on a personal computer. Also outlined in the
previous chapter were the states’ and territories’ centralised responses to the
requirements of schools for the necessity of software by using their
leveraging capacity to negotiate with Microsoft Corporation for ‘whole of
education department’ licences. While not necessarily recognised as yet by
governments, these licences currently represent a recurrent cost to the states
and territories of several millions of dollars per year.

Each of the following scenarios has been conceptualised within a ten-year
timeframe, although a longer timeframe may be required. These timeframes
have been used since the two counter-hegemonic scenarios propose the use
of open source software and represent suggestions for gradual changes to
the relationships the states and territories have with the Microsoft® Corporation. The renewal of each state and territory’s respective licence agreement would have to be considered within that timeframe.

Powerful corporate interests such as that exercised by the Microsoft® Corporation will not accept counter hegemonic strategies without constructing their own countering strategies, as has been demonstrated by the Corporation’s responses to some open source code initiatives. For example in July 2001 Microsoft® Corporation executives released public statements aimed at undermining the use of open source software, and the ability to make modifications to source code, as the following report illustrates. ‘Microsoft®’s comments have branded this way of working [using open source code] anti-American and destructive to intellectual property’ (Linux Online 2001: 3). This is a practical example that demonstrates the theory of hegemony (Gramsci 1971), which argues that powerful interest groups will struggle to maintain their commonsense, and hence their hegemonic positions.

None of the following scenarios have been constructed with the view of eliminating the use of Microsoft® products within Australian public schooling systems over the period of ten years, but rather to generate a way of cutting across the hegemony as it is now exercised. Furthermore, it is asserted that by reducing the extent of the use required of Microsoft® products, a negotiating tool would be provided for bureaucrats when renegotiating the costs and extent of licences required, since renewal of these licences would occur several times during the ten-year timeframe proposed.

**A Meta-Narrative: Proposing The Use of Not-For-Profit Open Source Software**

Open source code is open, unrestricted and freely available by downloading it from the Internet. This code can be moved around to customise software and fix bugs in order that the software meets the specific demands placed on it. As such, open source code can be readily structured to meet the human demands
required of it. This is in comparison to closed source code which has been
developed with a ‘one size fits all’ view of the world, and with the social and
cultural influences and assumptions of the developers inherent in it. The
software the states and territories purchase, developed by Microsoft®
Corporation uses closed source code. Closed source code by its very nature
(that is, being closed), generates more restrictive uses of software.

As indicated previously, source code is the language used by programmers
to create the software required to make computers work. Closed source code
means that this code cannot be opened, customised or reauthored to meet
specific requirements of individual locations nor can it be manipulated in
order to fix bugs without paying Microsoft® Corporation for the rights to
make such changes to the code. Failure to abide by the requirements placed
by the vendor on the customer brings the risk of being sued for breach of the
licencing agreement.

Using open source software
Open source code has been developing since the early 1990’s. Linux and
FreeBSD are examples of operating systems software using open source
code. Open source operating systems are based on UNIX compatibility.
When open source code is downloaded from the Internet the users of that
source code are required to adhere to the licence agreements outlined in the
Open Source Definition (Open Source Initiative 2001). The Open Source
Definition (OSD) is consistent with the copyright licence called the General
Public License (GPL). This licence was developed by the Free Software
Foundation (FSF), and the terms of these licences are critical to an
understanding of how open source software can be used.

These licences stipulate a number of provisions for the use, distribution and
modification of this free, unrestricted open source software. Under the
guidelines of the Open Source Definition, an open source code licence must
conserve ‘an unconditional right of any party to modify (and redistribute
modified versions of) open-source software’ (Raymond 2001: 72). The
licence for open source software allows for the unrestricted distribution of
the software but it does not preclude the sale of products that include open
source code as long as the product does not require a royalty fee to be
attached to the item and the software can be modified and redistributed for
free (Open Source Initiative 2001: 1). This means for example, that
companies such as Red Hat and Caldera can earn their income from services
such as training and support of compatible software versions to Linux. In
selling a product that uses open source code, under the General Public
License the vendor cannot restrict or take away the rights of the purchaser
that are stipulated under the General Public License. It should be noted
however, that open source software is not in the public domain. Open source
software is covered by a licence whereas software in the public domain is
not copyrighted. The copyright of the open source software belongs to the
author.

Linux
One operating system using open source code is Linux. Although discussing
open source software generally, the discussion in the next section, outlining
the three scenarios, will focus upon the possibilities of using the operating
system software called Linux, but the principles described also apply to
other open source software.

During the 1990’s the developmental work on Linux and other open source
code initiatives occurred, and in 2002 Linux is now considered in the
commercial world as a legitimate threat to the power of Microsoft®
Corporation. In late 1998, Microsoft® publicly acknowledged the existence
of some internal briefing memos that had been leaked from the Microsoft®
Corporation (Microsoft® 2001b; Raymond 2001). These have been
nicknamed the ‘Halloween documents’ because they were released to the
public on Halloween day in 1998. These documents essentially undertake a
threat assessment by Microsoft® of open source software to Microsoft®
software. An excerpt from the executive summary of this memo states that
OSS [open source software] projects have acquired the depth & (sic) complexity traditionally associated with commercial projects such as Operating Systems and mission critical servers. Consequently, OSS poses a direct, short-term revenue and platform threat to Microsoft - particularly in server space. Additionally, the intrinsic parallelism and free idea exchange in OSS has benefits that are not replicable with our current licensing model and therefore present a long term developer mindshare threat (Open Source Initiative 1998: 2).

Commercial companies are using Linux. For example, according to the Australian Financial Review (Byrne 2001), as a research project, IBM has developed a computer shaped wristwatch that uses the Linux operating system. According to Carrigan (2001) IBM market research (cf IBM 2001) indicates that 11% of companies in Asia are using Linux for production purposes (Carrigan 2001). There has been a $1 billion worldwide commitment to Linux developments with $200 million in each of the Europe and Asia Pacific markets including the creation of Linux development centres. Companies such as Shell, Warner Brothers and Chevron are using Linux. Recent large cluster installations using Linux have been undertaken, and in the United States of America, the National Center for Supercomputing Application (NCSA) is working towards creating the United States of America’s next generation of information and computational infrastructure (to be called The Grid). They have chosen to use Linux (Carrigan 2001).

Linux development model
Using open source software such as Linux is as much a social process as it is a technical one. It is important therefore to understand the philosophy underpinning the development of Linux, in order to understand how two of the following scenarios can be counter-hegemonic. It is intended that outlining how Linux is developed and maintained will provide insights in how it could be used in public schooling systems and schools, and at the
same time be consistent with the democratic sentiments of free, compulsory and secular schooling.

People within Linux communities contribute to its development and maintenance in the ways in which they are able. Programmers, working on the Internet, have developed Linux in a devolved manner. Those people with sufficient knowledge aid in the development process in a variety of ways including testing and debugging of software, writing user documentation and helping others use the software. This work is conducted through mailing lists and Internet Relay Chat (IRC). That is, this devolved model is used for product development, testing and maintenance. Those accessing Linux from the Internet are able to gain help desk support through Linux user groups. In Australia there are such groups established in most of the states and territories and in those groups issues are discussed and solutions found amongst the community of Linux users. People contribute their ideas and experiences in order that the collective is able to develop greater wisdom. These groups can be considered to be akin to ‘communities of learners’ (cf Whyte 2000) and these are necessary in learning organisations.

Members of Linux communities share systems of beliefs and values about software development and accessibility. There is the belief that software should be freely redistributable. It is considered a good thing that it can be modified to suit the social and cultural requirements to which the software is to be put and this justifies the contribution of considerable collective effort. It is therefore a culture that encourages code sharing. The capacity to redistribute source code gives the users of the software control over the technologies that they use instead of vendors controlling customers by restricting the access to the software code. Amongst the network managers and technicians who manage the network systems, the ability to participate in this community requires a higher skill level than simply maintaining the operation of software. The development of these skills is supported by working in the Linux communities of learners and assists the process of
continuous improvement of both the software and the skills of the people involved.

Some authors refer to the model of development and use of Linux as being based on the concept of the ‘gift economy’ (Kollock 1999; Raymond 2001; Rheingold 1993), where the distinction is made between a gift and a commodity. Rheingold (1993) intends by his labelling of the model as a ‘gift economy’, that there is a reciprocity of contributions made between members of the community, and where each participant feels that he or she is contributing to a greater good. Kollock (1999) draws on Carrier (1991) to explain that the model underpinning the development of Linux has been one where there is no bargaining or demand. A digital ‘gift’ is contributed to the open source software project, and this project is always in a state of development or continuous improvement. Kollock (1999) also suggests that the relationship between those in the Linux communities is such that the relationships are built upon both the giving and receiving of contributions which further improve the software and its associated requirements.

Himanen (2001) simply describes Linux development as one that uses a decentralised development model, where anyone can freely contribute ideas and solutions, which are published on the Internet. There is an absence in Linux user groups of the legal coercions and the dominance and subordinance that characterises the relationships between the vendors and the customers purchasing closed source software.

Benefits of using Linux

The Linux strategy is geographically dispersed and runs on nearly all major hardware platforms. There is no other operating system with this characteristic (Carrigan 2001). As such there is a growing acceptance of using Linux for commercial purposes. Due to the open and unrestricted nature of the source code Linux is becoming the basis for innovative uses of technology (Carrigan 2001), as it provides stable, reliable and affordable servers. Given the pressure on the state and territory budgets for public
schooling, free and reliable servers and operating systems are an attractive proposition.

Since the purpose of Linux software developments is to continuously develop better software, and as this occurs through those with the skill and interest contributing to that process as a part of their working lives, there is a lack of a profit motive. This means there is also a lack of aggressive marketing and hence there is not a struggle for the establishment of the commonsense (Gramsci 1971) which characterises Microsoft® Corporation’s approach to product diffusion. That is, the strategies used by companies treating schools as commodity markets are absent from open source software initiatives.

Mythical benefits of using closed software
Raymond (2001) raises issues that he believes motivate people to purchase closed source software systems. Two of these are addressed here: the first, that there is somebody to hold legally liable should the software not work; and the second, that the purchase of software also buys help desk and troubleshooting services. To return to the first point, Raymond (2001) asserts that one motivation for the purchase of closed software occurs because it has a warranty. He argues though, that it is a myth to think that purchasing software on the basis that there is somebody who can be legally responsible should the software not work, is wrong-headed. He states that most commercial software licences are written
to disclaim even warranty of merchantability, let alone performance – and cases of successful recovery for software nonperformance are vanishingly rare. Even if they were common, feeling comforted by having somebody to sue would be missing the point. You didn’t want to be in a law suit; you wanted working software (Raymond 2001: 56-57).

This view is an uncomfortable position however, for school systems’ bureaucrats because they are in the position of justifying the use of government money. It is more comfortable to indicate to a Minister of the
Crown that there are legal enforcements in place concerning a software licence (albeit the reality of those enforcements is mythical), than to place faith in the skills of the employees of the workforce. Governments therefore are buying contracts rather than expertise.

Secondly, Raymond (2001) suggests that the purchase of software also buys help desk and troubleshooting services. He indicates that the price of software is ‘effectively capped by the expected future value of vendor service (where “service” is here construed broadly to include enhancements, upgrades, and follow-on projects)’ (Raymond 2001: 118). He continues by stating that ‘software is largely a service industry operating under the persistent but unfounded delusion that it is a manufacturing industry’ (Raymond 2001: 119). While access to help desk support is important, in schools much help desk support is provided by the on-site technicians, or in the case of South Australia, there is a legal obligation to use EDS for specifically identified tasks. Therefore the predicted cost by the software vendor for the provision of such services is likely to be higher than the actual cost for its provision. Such a model is also predicated upon the use of closed source software where the answers to problems will revolve around how to use the closed source software, rather than how to de-bug the software in order to make it work for the required task.

It was argued in the previous chapter that one of the ways hegemonic relationships are maintained is to ensure that certain ideas and routines are seen as natural and universal. The strength of Microsoft’s dominance achieves this sense of what constitutes the ‘normal’ or commonsense (Gramsci 1971) understanding about the nature of software development and use. To consider the two mythical benefits of using closed source software from the opposite perspective however, challenges this commonsense. Instead of purchasing software and the associated licences from vendors, Linux can be downloaded from the Internet for free. Those using and maintaining it require the skills to enable them to ensure that the software works, and to overcome any problems they encounter. Should they
require service support, they can link into a network of people via the Internet to gain advice when required. In this ongoing or continuous way, they can develop the skills required to provide the on-site services as they are demanded. As the school computer administrator Edward Irvine (2000) has observed, ‘lack of support: this is a perceived problem. The real truth is that Free BSD and Linux mailing lists offer some of the best support available - at any price. There is also commercial support available – at commercial prices’ (Irvine 2000: 8).

The use of open source software then, has some benefits but it requires the courage of leaders in schools and schooling systems to work against the commonsense established by the Microsoft® Corporation, for using their products. Further, it requires the commitment from schools and schools’ systems managers to the ongoing skill development of the school computer administrators and technicians undertaking the establishment and maintenance work of a school’s operating systems. These approaches to software development and use cut across the hegemony exercised by Microsoft® Corporation’s models aimed at optimising its market share and its profits.

Potential risk
Open source software such as Linux does not come with a warranty. Given that closed source code warranties are probably unenforceable and that the emphasis in an open source code model is to find solutions to problems, this should not be problematic. Overcoming the potential risk however, is dependent upon the commitment to the changes proposed and the provision of ongoing professional development and skilled personnel to offset it.

Any counter-hegemonic strategies run the risk that those wanting to maintain their dominance will resist such strategies. The success of working against the maintenance of dominance requires resilience over time, and an understanding that counter-hegemonic stories will be rebuffed through whatever means are available to those exercising their dominance.
Recognition that hegemonic relationships are worked at in order to be maintained, also requires the recognition that ongoing work is necessary for counter-hegemonic strategies to be successful.

Using Linux in education
There are precedents within Australian schools and universities where Linux is the operating system being used. The University of Sydney has computer laboratories which alternate between Linux, FreeBSD and Windows NT operating systems (Irvine 2000). The University of Warwick uses Linux as does Banca Commerciale Italiana (Carrigan 2001). Xavier College in South Australia uses open source code for its file servers. Overseas, some schools also use Linux and other open source code software to run their digital technologies. Riverdale R-12 School in Portland Oregon in the United States of America is undertaking the K12 Linux Project (Riverdale K-12 Linux in Schools Project 1998). The French Linux User Group has signed an agreement with the French Ministry of Education to support the use of Linux in the French schooling system (Association Francophone des Utilisateurs de Linux et des Logiciels Libres 2000). Globally, the SchoolForge project was launched in January 2002. It has the aim of promoting ‘the use of open source and free software, open texts and lessons, and open curricula for the advancement of education and the betterment of humankind’ (SchoolForge 2002: 1). The Linux website hosts a site specifically for children, which can be accessed in English, French, Spanish and Portuguese (Linux for Kids: 2000).

Two Counter Hegemonic Scenarios Using Open Source Code
The following two scenarios propose that open source code be used instead of Microsoft® products to undertake identified specific and discrete activities. If these scenarios were to be implemented, the specific activities undertaken would be identified through conversations with those who would be most closely involved in their implementation. In these scenarios, the activities are expanded over time, on the premise that the open source software community in the public schooling sector would grow and mature.
Both the scenarios outlined in this thesis use the Internet to support devolved methods of working, and would be consistent with the policies supporting local school management in Australian public schooling systems.

The preconditions for implementing these scenarios are that they require a culture within the school system committed to generating learning organisations where continuous improvement is valued, and at the school level they require an actively supportive school principal, and a school network administrator or computer technician with the skills and interest to commit to a program of ongoing learning about the use of open source software such as Linux.

A ‘Learning Organisation’ Scenario
The following scenario is written as if the story has occurred. It is however, at this stage a fictional story of the future. This scenario has three contexts to it. The scenario is proposed for operation at the school, state or territory and national levels. It is premised on the view that school computer administrators and technical officers contribute to a school being a learning organisation. This scenario has been written as if it progresses sequentially through the three contexts of the story. The action could be undertaken concurrently however.

School level context
This school level scenario began with a school’s network computer administrator deciding to trial the processes involved in getting one server’s operating system to run using open source software. The school had a local area network and was part of wide area network. This network computer administrator’s work included ensuring that her school’s email, web serving, file serving, database serving, file server backups and desktop software operated reliably. Microsoft® software had been used for these activities but it had been discovered that they could also be managed using open source software, and that this was a cheaper and more reliable option. In addition,
this public school had received several old computers that had been recycled from a government department, as it no longer required them.

The network computer administrator knew that open source software could run on the Intel computers (Welsh 1994) that had been purchased by the public school in which she worked. She also knew that due to its less demanding hardware requirements such software would make the recycled computers received by the school also work well. She decided to conduct the trial using open source software to replace some of the software functions usually undertaken by Microsoft®.

To do this, she used the open source software SAMBA on the server, so that the front-end computers continued to run Windows. The front-end computers interpreted the messages communicated to them as if they were talking to other Windows servers. That is, she connected Windows computers to the Linux servers using SAMBA. Therefore, the back office software rather than desktop software was changed over, and so for most users of the local area network in the school, nothing on their desktops changed.

Commenting on the outcome from this trial, this school administrator stated that ‘for many network server tasks, such as email, web-serving, and file serving, the open source software not only represented the most economical solution, it also represented the most reliable solution’ (cf Irvine 2000: 9, emphasis in the original).

The principal of the school supported the trial by structuring the work of the school’s computer network administrator to allow her to participate in the online Linux chat lists and support groups. That is, the computer network administrator had time structured within her work schedule to be part of the learning community of the local open source software user group. This was considered part of her professional development.
Over the course of time of this scenario, the computer network administrator increased her technical skill levels. As she did this she shared her experiences with other computer technicians in the school. With this, the use of Linux and other open source software was broadened throughout the school’s infrastructure requirements. This school’s network and computer administrators now are familiar with both Microsoft® and open source software. The extent of dependence on Microsoft® software and training over time has been reduced. The school now can choose from the computer hardware companies Compaq, Dell, Fujitsu and IBM since they each are delivering servers and desktops with Linux already installed (Irvine 2000). In this scenario then, the open source software was used to undertake a task that replaced the functions of a Microsoft® product.

State or territory level

The outcomes from this trial were watched with interest by officers within the public schooling system in her state and by those in other states’ public schooling systems. Given the success of the school level trial this scenario was broadened to be a trial that involved a small number of schools across a public schooling system. Expressions of interest from schools wishing to participate in the trial were sought. This state level trial was aimed at identifying the strengths and difficulties arising from moving a school’s local area network operating system into an open source software environment and the implications of that for networking on a wide area network. Government funding was provided so that difficulties were identified, solved and shared with others.

In this trial some schools replaced the functions provided through Microsoft® software while others chose to top up the allocations of software provided from their whole of department Microsoft® licences, with open source software. The initiative was then broadened to include other networks of schools. The hub of each network was the school that had first introduced the use of the Linux or other open source code software into its work. The network of schools became its own Linux support group. This
gave the clustering arrangement a meaning for its existence. The breadth of expertise across the schools became progressively more skilled and continuous improvement became a legitimate part of the schooling systems’ culture.

National
Observing the successes schools were having with using open source code the National Materials Development Network (NMDN) decided to trial a national approach using open source software. These officers were working in distance education materials development and included some officers who were working on issues relating to the provision of distance education using digital technologies. This trial was undertaken using this existing network of educators as they had the commitment to trial the activity. Officers within this Network identified a local area network server in each state and territory on which to trial the use of open source software. They were interested to see how interoperability standards that would be applicable nationally, could be established using open source software. The commonwealth allocated funding for the computer administrators’ and network managers’ time to trial the use of Linux or other open source code software in their worksites. This scenario led to the questioning by students, teachers and departmental officers about the extent and use of Microsoft® products. As a result of the school level, state and national trials it was predicted that over a ten-year time period the number of licences required from Microsoft® would be reduced.

Counter-hegemonic outcomes achieved through this scenario
Several counter hegemonic steps were achieved through these trials. Firstly, the assumed dependence or the commonsense of having to use Microsoft® products was challenged. Secondly, it was discovered that suitable help desk support for the use of open source code was available through support groups such as the Linux support groups and this reduced schools’ dependency on Microsoft® training. Thirdly, the skill levels of the school based technicians increased as they moved from users of closed source code
to contributors to solutions of problems using open source software. Leaders in schools and school systems saw the potential for the costs of the software infrastructure required from Microsoft® Corporation could be reduced. This gave the officers negotiating licences with the Microsoft® Corporation a better bargaining position than they had had in the past. In other words, it could be seen that there was the capacity for those in schools and in schooling systems to reauthor the ‘Microsoft® story’.

A Curriculum Scenario

Like the ‘learning organisation ‘scenario, this ‘curriculum scenario’ also has three contexts: the school, the state and national levels of schooling. This scenario is premised on developing students as critical producers and users of digital technologies, and on developing students who are lifelong learners. It is suggested that this scenario would not be introduced until the school or a network of schools have in place the personnel expertise, the appropriate school culture and the commitment to undertake this scenario. It would be consistent with the national goal of schooling 1.6, which states that all students will leave school as ‘confident, creative and productive users of new technologies, including information and communication technologies, and understand the impact of those technologies on society’ (MCEETYA 1999a: 2).

School level

Teachers in a secondary school computing studies faculty attended a professional development workshop about the digital technologies industry sector and discovered that there was a shortage of people with skills in using Linux and other similar open source software. These teachers had students who were enrolled in computer studies courses where they learnt about programming and conducted computer club activities with the broader student body. The teachers decided to trial the introduction of open source software into their teaching and learning activities. They allocated one network of computers within the school to students in the computing studies class and to those in the computer club, to run an open source software
operating system. Linux was chosen for this purpose. The students were accredited for their work, consistent with the way other vocational education and training in schools programs were accredited. The teaching and learning used was project-based learning, and included meaningful problem solving tasks, where individualised learning activities were undertaken within a team-based approach. Students met the outcomes of their curriculum requirements by learning about open source code.

As in the previous scenario, these students took part in Linux user groups over the Internet and collaborated with students in other schools both in Australia and overseas undertaking similar activities. This allowed the students to develop a broader view about what was and what was not possible, using digital technologies with open source code.

These students were successful in their studies and left school with skills that would be useful to them throughout their lives. On leaving school, many students continued to be involved in the Linux Users Group as this could be undertaken without financial cost for the software or for their participation in these groups. The students left school highly skilled in using both Microsoft® and Linux software and therefore were more highly skilled and employable than their counterparts who were only familiar with the Microsoft® suite of products. In addition, these students learnt how to participate in activities for altruistic purposes rather than purely for competitive or self-interested reasons. Their success story was covered in a newspaper article which brought the potential of this sort of teaching and learning to the attention of some state level public school sector officers.

State or territory level

Due to the success of cohorts of computing studies students learning about open source code, a group of teachers developed a vocational education and training curriculum that fitted within existing senior schooling structures. Teaching and learning materials were developed and distributed to schools to support teachers of senior school computing studies subjects. These
materials helped teachers orient their courses so that the objectives were met with students learning how to use open source code. Clusters of schools were funded to undertake trials of the courses which included teaching about open source code. These courses were offered in a similar manner to the Microsoft® or Cisco courses offered through certain schools. In comparison to the Microsoft® and Cisco courses, schools were able to offer to the students the open source code courses without any additional charges to their usual school fees. As a result and over a period of several years, there was a growing number of students enrolling in computing studies courses where the skills of learning how to use open source code were offered.

National
Along with literacy and numeracy, and in line with the national approach to languages already underway in Australia, an understanding of the language used by computers was also seen nationally, as an important skill for students to learn. Given the nature of the curriculum offered was a state or territory responsibility the commonwealth government supported the activities conducted at the school level in each state and territory, with professional development funds.

Counter-hegemonic outcomes achieved through this scenario
This scenario supported the achievement of counter-hegemonic strategies by again challenging the assumed dependence or the commonsense of having to use Microsoft® products. The belief that private sector companies universally use Microsoft® products was proved to be false. Students were prepared for the digital technologies labour market by fostering the technological literacy skills required for lifelong learning. These skills were not dependent upon learning about one particular product but developed students’ understanding of the language or the building blocks that make up software. They learnt the philosophical differences between the motives that underpin keeping source code open, and those motivating the closure of source code. In this way students were taught to question and problem solve.
outside the boundaries imposed through the use of closed source code systems such as those offered by Microsoft® products. Students developed an understanding of how to use the technologies but also developed understandings about the impact of these technologies on society, especially where the impact was controlled by multinationals such as the Microsoft® Corporation. Over time, the control the Microsoft® Corporation had been exercising over parts of the school curriculum was reduced.

**Status Quo Scenario**

The previous two scenarios have been provided as a contribution to counter hegemonic conversations for the future. The last scenario to be considered here is to muse about the future should current arrangements remain in place.

In this scenario the contracts for Microsoft® licences have continued to be required and have been expanded. This has meant that the public funds that have continued to be directed to this multinational company have increased, with little leveraging achieved by the states and territories, as they have continued to negotiate Microsoft® licences on a state or territory basis. They have continued to do this in the belief they were purchasing a software licence that has been developed for their perceived unique requirements. The nature of the products included in each state and territory’s licence though, have remained highly consistent across each of the states and territories.

There has been an extension of the coverage of the licence agreement to allow students to use Microsoft® products at home. Public schools have continued to be targeted with various seductive Microsoft® marketing strategies including the continued offering of Microsoft® scholarships and the provision of Microsoft® accredited training. Students have continued to learn how to use closed software systems rather than how to be creative within open source code environments. The respective public schooling systems have continued to abdicate their responsibilities for teaching and learning about the controversial issues that arise from critical examination of the implications of using digital technologies. Public schooling systems have remained satisfied
that having companies such as Microsoft Corporation and Cisco teaching about their respective products is satisfactory for meeting the different states and territories stated goals for schooling. Microsoft has maintained its dominance in part by continuing the commonsense of using their products, and by labelling those using open source software as subversive.

**In Summary**
Since this thesis has used an interpretative approach to the research, using narrative theory along with the concept of hegemony, and since scenario planning, like narrative theory is grounded in telling stories, albeit specifically about possible futures, scenario planning has been used in this chapter to tell specially constructed stories about the future that may contribute to our processes of meaning making. Further, it has been argued that stories can contribute to the building of a commonsense about particular issues by providing legitimacy and consent to hegemonic situations. Alternatively, they can be used to frame counter-hegemonic scenarios for the future. Therefore, the purpose of using scenario planning here was to help develop counter-hegemonic stories for the future.

This chapter has proposed scenarios or narratives about the future as proposals for reauthoring the extent of the contractual obligations the states and territories have to the Microsoft Corporation. It was argued throughout Part II of this thesis that the provision of public schooling is dependent on an infrastructure to support it, which, in the case of using digital technologies in schooling, includes the requirement of operating systems software. This is presently purchased from the Microsoft Corporation. This chapter has outlined how open source software such as Linux could be used to replace some of this software. In addition, it was argued in Chapter Five that the Microsoft Corporation exercises a form of hegemony. In response, this chapter has proposed counter-hegemonic stories.

The counter-hegemonic scenarios presented here have aimed at proposing futures which present alternative stories to the existing ones. These
scenarios have aimed to tell stories that support the development of a learning organisation where continuous improvement is a feature; to provide strategies that could move Australians towards being producers as well as consumers of digital technologies; have the aim to raise students outcomes from schooling by developing their technical and critical abilities using digital technologies; to propose alternative models for the technical maintenance and support of operating systems required for the network infrastructure in schools and systems; and to provide schooling systems with an improved bargaining position with the Microsoft® Corporation.

It is argued that to remain with the status quo will maintain the existing expenses and hegemonic relationships that currently exist between Microsoft® Corporation and the respective states and territories in Australia. Further conversations to take forward the counter-hegemonic proposals are now required.
PART THREE

This is the final part to the thesis. The following chapter summarises the major debates raised throughout the thesis in addressing the question: ‘what does public schooling mean in Australia in the 21st century, with its past tradition of free, compulsory and secular schooling, and given the present public schooling sector policies are urging the ubiquitous use of digital technologies?’ This final chapter argues that a continuing commitment to the democratic purposes of schooling requires reiteration, as the linking of schooling, neoliberal economic markets and digital technologies has the capacity to recast education in complex ways. It is argued that there is the danger that the democratic sentiments that during the 20th century have been inherent in the tradition of providing public schooling that is free, compulsory and secular, will be undermined. Chapter Seven concludes the thesis.
CHAPTER SEVEN

WHAT DOES PUBLIC SCHOOLING MEAN IN THE 21ST CENTURY?

The central question addressed in this thesis has been ‘what does public schooling mean in Australia in the 21st century, with its past tradition of free, compulsory and secular schooling, and given the present public schooling sector policies are urging the ubiquitous use of digital technologies?’ In addressing this question the thesis has aimed to contribute to the development of a stock of Australian research based within and pertinent to the public schooling sector. Further, this thesis has aimed to stimulate and add to the conversations concerning these policies.

To answer the identified question then, this thesis has taken an interpretative approach using narrative theory along with the concept of hegemony in order to interpret, understand and explain the stories being told in response to this question. The temporal concept important to narrative theory, that of the past, the present and the future (Carr 1986), has been used to structure Part II of this thesis. It has been argued that time comprises events and actions, and the past, the present and the future provide coherence to these. It has been argued that meanings of public school education in Australia have histories and traditions that have developed over time, and influence policy developments today. It has also been argued that we make meaning through the use of stories or narratives but that stories can also provide legitimacy and consent to hegemonic situations. Conversely though, narratives can be used to frame counter-hegemonic scenarios for the future.

In answering the central question identified for this thesis then, stories have been bought from the past into the present, in order to make meaning, and to propose actions for the future. In this study, this has been achieved by gathering stories told by the participants through research conversations, and these, along with the stories told by the official texts of governments, have been used to prepare this thesis.
THE CHANGING MEANING OF ‘PUBLIC SCHOOLING’

It has been shown that developing interpretations and understandings of the meaning of ‘public schooling’ is a complex task. Its meaning has changed over the course of time, ever since the proclaiming of the respective Education Acts. These Education Acts introduced public schooling that was ‘free, compulsory and secular’. With the widespread use of digital technologies in public schooling the meanings attendant to ‘public schooling’ being ‘free, compulsory and secular’ have continued to change as this thesis has demonstrated. Meanings of public schooling that have been debated in this thesis are now summarised.

Public Schooling Is State-Funded, Secular And Available To All

Public schooling has included a meaning that has seen it funded by the State through taxes and provided in public school buildings, at specified times of the day. It has been argued however, that with the widespread inclusion of digital technologies into schooling, this interpretation of its meaning is being reconsidered. It was argued in Chapter Five that presently, there is thought being given to what is ‘schooling’ and what is a ‘school’. That is, there is some questioning of whether the provision of public schooling should continue to be defined according to teaching and learning occurring in school buildings. Furthermore, there have been questions raised concerning what the provision of public schooling actually guarantees. It has been demonstrated that changes to how schools and schooling are defined however, require changes to the Education Acts. In some states, such changes are being proposed through public consultation documents, as precursors to changes to these Acts. With the legislative conditions for schooling being reviewed then, and in light of the emerging use of digital technologies, there is a changing view about what constitutes ‘public schooling’ in Australia. It has been argued then, that while we have traditionally understood public schooling to be that conducted ‘face to face’, in identified school buildings, it is being redefined to include some provision of distance education via the Internet, by all schools, irrespective of the location of the students.

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Using Public Schooling To Ensure Equity Of Provision

Linked to the tradition of providing ‘free, compulsory and secular’ schooling has been the tradition of providing distance education as well as ‘face to face’ schooling. The provision of distance education in part has been based upon the assumption that public schooling systems should offer all the children in each state access to similar educational opportunities (cf Hyams and Bessant 1972). That is, the meaning of public schooling being ‘free, compulsory and secular’ has included an interpretation based on equality of provision to all those under the age of compulsion. Traditionally, distance education has been provided to those students located too far away from public school buildings to physically attend school. To ensure these students received ‘free, compulsory and secular’ schooling, distance education was provided. In distance education then, there have been clear purposes for introducing the use of digital technologies to overcome the barriers presented by distance in time and space.

The provision of both distance education as well as ‘face to face’ schooling have been discussed throughout the thesis not only because the provision of distance education is reflective of an understanding that equality of provision has underpinned the meaning of public schooling, but it has also been argued that distance education has always been a technology-mediated teaching and learning methodology. Distance education specialists and their students have been early adopters of digital technologies and therefore, it has been argued, have experiences using those technologies that may be helpful to ‘face to face’ teachers and students, as they begin to use them as part of their teaching and learning activities. It is argued that with the advocated use of digital technologies as an inherent part of public schooling there has been emerging, a convergence in these two styles of schooling.

Also central to the meaning of public schooling where this has been interpreted as referring to ‘equity of provision’ has been the importance of the relationships between the student and the teacher. It has been argued that these relationships are important to students in both ‘face to face’ and in
distance education. Further, it is argued that the relationship between the
teacher and the student remains important when using digital technologies
for online learning. That is, although missing from many of the policy texts,
to enable students to learn to use digital technologies requires teachers’
guidance. As such, future meanings of public schooling require the stated
recognition that teachers will continue to hold an important place in the
provision of public schooling.

Equality Of Provision Requires Facilities
It has been argued throughout this thesis that the provision of ‘free,
compulsory and secular’ schooling is dependent upon the provision of the
infrastructure or the facilities required for teaching and learning to be
conducted. Without the necessary infrastructure, schooling is not accessible
to all. Traditionally the infrastructure for public schooling has been the
school buildings, or where the access by students to these buildings has not
been possible, the provision of distance education. With the advocacy for
using digital technologies in schooling however, the provision of the
necessary facilities now includes access to telecommunications, electricity
and computers. In schools, local and wide area networks are required for
communication between computers.

Policies advocating the ubiquitous use of digital technologies in public
schooling, where the meaning includes equality of provision, have therefore
resulted in the necessity for a complex set of inter-relationships to occur
between policies within and beyond schooling. This has made the provision
of the infrastructure required for the delivery of public schooling dependent,
in unprecedented ways, upon the private sector and on the efficiency of the
telecommunications and other commodity markets. It has been
demonstrated in this thesis, that while the use of digital technologies has
been promoted as a way of overcoming discrepancies in the provision of
public schooling between urban and non-urban areas, due to factors such as
the lack of suitable telecommunications and in some cases, electricity
infrastructure, the provision of public schooling of a similar quality
throughout a state or territory has been problematic.
The use of Microsoft® software and operating systems in public schools and systems in Australia, has been outlined in detail in this thesis as one example to illustrate how the provision of public schooling with policies advocating as a core requirement the use of digital technologies, is now dependent on commodity markets. There have been implications from doing this which have included seeing considerable funding being directed from the public purse to the private sector for the purchase of telecommunications services, and for goods such as computer hardware, software and networking facilities.

It has been seen in this thesis that there is a tradition in public schooling that sees each state and territory perceiving itself as being unique. It was demonstrated in Chapter Five that this tradition has been maintained in relation to the purchase of Microsoft® licences. It was argued that this tradition serves the competitive interests of the Microsoft® Corporation. In other initiatives arising from the use of digital technologies however, such as the Le@rning Federation (SOCCI) project, there has been a rekindling of national collaboration or to draw on Lingard (1996), there has been a re-emerging of a ‘new federalism’.

The links to deregulated digital technologies and telecommunications markets then, have brought changes to the nature of the provision of public schooling, and this in turn has brought changes to the meaning of public schooling. These changes to the meaning of public schooling however, have not been consistent. Instead, it is argued, the links between the private markets, digital technologies and public schooling have varied depending upon what has been in the best interest of the market.

**Public Schooling Is Free**

Along with ‘public schooling’ referring to the use of public funds for its provision, this meaning has included that at least in terms of tuition costs, schooling in Australia has been provided free of charge. The notion that public schooling is ‘free’ has always been problematic but with the
introduction of credentials such as the Microsoft® Certified Systems Engineer and the Microsoft® Authorised Academic Training Program offered in schools, the perceived value of these by parents and schools led one participant in this study to comment that

some schools, government schools charging $4000 a year for students, now that’s happening right now. When government schools are charging those sorts of fees the borderline between them and a Catholic school for example, you know, I can’t see it frankly (AB 12 July 1999: lines 330-334).

The hegemony of specific companies’ curriculum then, is seeing some changes to how schools structure the charges for the schooling they provide, and this is raising questions about what constitutes ‘free’ and ‘public’ schooling in the 21st century.

Public Schooling Is Secular

It has been apparent throughout the thesis that the economic purposes of schooling are explicitly outlined in the policies reviewed. It has been argued too, that the market economy within the public schooling sector contributes to schools ability to play hegemonic roles. These links to the economy are so strongly embedded, that they appear natural.

The provision of compulsory schooling is being viewed at least by some private sector vendors as a commodity market. This is seeing the commodification of the space of public schooling as the public and the private sectors are brought more closely together through the advocacy of using digital technologies in schooling. Commodity markets then, are now characterising the nature of public schooling, and it has been argued, these markets are not neutral. Advertising and branding of products are deliberately used to influence those working and studying within the public schooling sector.

While the provision of ‘secular’ schooling originally referred to the absence of religious education in public schooling, and this was determined in order to avoid the differences in views between the respective denominations, the
new ‘religion’ to be found in public schooling is represented through the various companies in private sector commodity markets. Companies in these markets have as their primary aim to make profits rather than to ensure the best interests of all students. Such motives are at odds with public schooling being ‘free, compulsory and secular’, and as will be seen, are also at odds with an interpretation of the meaning of ‘public schooling’ that includes the principles of democratic education.

**Public Schooling Is Democratic**

Another meaning of ‘free, compulsory and secular’ public schooling has been that it is central to the operation of a democratic, civil society. That is, public schooling has included the meaning that it is a necessary public good. The physical places called ‘schools’ have been places where young people have shared common experiences and undertaken the social, emotional and ethical development required in order to participate in society. Schools then, have been places where democratic values of a society have been taught.

It has been argued in this thesis however, that this meaning of public schooling including a definition of democracy where young people are taught how to contribute to a common good, is being contested. With the primacy of markets in schooling, democracy is being redefined to an interpretation that means individuals have an equal freedom to choose products and services within a market economy, with economic and social self-interest being placed on the high moral ground (Marginson 1997). Public schooling is becoming more corporatist and competitive and so arguably, the democratic values that have previously underpinned public schooling are being eroded. The democratic sentiments inherent in the meaning of ‘public schooling’ then, are degenerating. If this is accepted as being so, it will be important to take further the work begun in Chapter Six, of proposing scenarios for the future. It is necessary that stories are authored that see the uses to which digital technologies are put, include the furthering of the democratic purposes of schooling.
CODA

This study has included an interpretation of the stories, traditions, plots and myths that underpin the government texts advocating the ubiquitous use of digital technologies in Australian school education. Research conversations have provided insights into the views of the policy authors and of those in receipt of these texts. It has been argued in this thesis that the use of digital technologies in schooling has been redefining what has previously been understood by ‘public schooling’ and that there have been complex reasons for this. This has included changes to the underpinning notions of equality of provision to all the children within a state or territory, and to the democratic purposes of public schooling.

It has been seen that digital technologies are a part of the lives of Australian communities and have benefits to offer in undertaking, work, study and life in general. It would not have been possible to undertake this thesis without the use of a computer and the Internet, for example. As such, while recognising the problems inherent in the policies advocating the use of digital technologies in schooling, Part II of this thesis concluded with proposals for a reauthoring some of the hegemonic plots in evidence in the ‘Microsoft® Story’ presented in Chapter Five. There is room for more research work of this nature.

A purpose of this thesis has been to contribute to the debates concerning the issues that have arisen from the policies advocating the use of digital technologies in Australian public schools, and to take us some way forward in considering strategies that will ensure the democratic traditions held within certain meanings of ‘public schooling’, are furthered. There are more debates required on this matter however, with a wide cross section of the public schooling community.

So, let the conversations continue.
APPENDIX ONE

Table Four: Australian states’ and territories’ government departments for school education, their ‘whole of department’ policies, and their digital technologies policies 1997-2001

<table>
<thead>
<tr>
<th>States &amp; Territories</th>
<th>ACT</th>
<th>NSW</th>
<th>NT</th>
<th>QLD</th>
<th>SA</th>
<th>TAS</th>
<th>VIC</th>
<th>WA</th>
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</thead>
</table>
APPENDIX TWO

Table Five: States and territories ‘whole of government’ policies, ‘whole of government’ digital technologies policies and state and territory education department digital technologies policies 1997-2001

<table>
<thead>
<tr>
<th>State/Territory</th>
<th>ACT</th>
<th>NSW</th>
<th>NT</th>
<th>QLD</th>
<th>SA</th>
<th>TAS</th>
<th>VIC</th>
<th>WA</th>
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<td>wide policies</td>
<td>(ACT 1997)</td>
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<td>(NT Government 2000)</td>
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<td>digital technologies</td>
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<td>Education Department</td>
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<td>Digital Technologies</td>
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<td>Policy Statements</td>
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</tr>
</tbody>
</table>
## Table Six: Australian states’ and territories’ expenditure on identified digital technologies programs

<table>
<thead>
<tr>
<th>States &amp; Territories</th>
<th>Expenditure</th>
<th>Expenditure period</th>
</tr>
</thead>
<tbody>
<tr>
<td>NT</td>
<td>$7.8 million (NT Treasury 2001)</td>
<td>Per annum (NT DoE 2001c)</td>
</tr>
<tr>
<td>QLD</td>
<td>$8.2 million (Queensland Government 2001a)</td>
<td>2001-02 (Queensland Government 2001b)</td>
</tr>
<tr>
<td>SA</td>
<td>$13.368 million (Government of South Australia 2001a)</td>
<td>2001-02 (Government of South Australia 2001a)</td>
</tr>
<tr>
<td>TAS</td>
<td>$15 million (Department of Treasury and Finance (TAS) 2000)</td>
<td>2000-01 (Department of Treasury and Finance (TAS) 2000)</td>
</tr>
<tr>
<td>VIC</td>
<td>$82 million* (State of Victoria 2001)</td>
<td>2001-02 (State of Victoria 2001)</td>
</tr>
</tbody>
</table>

**Notes**
* Schools and TAFE allocation
## APPENDIX FOUR

### Table Seven: Australian states’ and territories’ expenditure on computer hardware only*

<table>
<thead>
<tr>
<th>States &amp; Territories</th>
<th>Expenditure</th>
<th>Expenditure period</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>$1.3 million (ACT DECS 2000b)</td>
<td>Per annum (ACT DECS 2000b)</td>
</tr>
<tr>
<td>NSW</td>
<td>$137.3 million (NSW Treasury 2001a)</td>
<td>2001-02 (NSW Treasury 2001a)</td>
</tr>
<tr>
<td>NT</td>
<td>$7.8 million** (NT Treasury 2001)</td>
<td>Per annum (NT DoE 2001c)</td>
</tr>
<tr>
<td>QLD</td>
<td>$5 million (Queensland Government 2001a)</td>
<td>2001-02 (Queensland Government 2001a)</td>
</tr>
<tr>
<td>SA</td>
<td>$4 million (DETE 1999c)</td>
<td>1999 (DETE 1999c)</td>
</tr>
<tr>
<td>TAS</td>
<td>$15 million# (Department of Treasury and Finance (TAS) 2000)</td>
<td>2000-01 (Department of Treasury and Finance (TAS) 2000)</td>
</tr>
<tr>
<td>VIC</td>
<td>$54 million (teachers’ notebooks) (State of Victoria (DEET) 2001c)</td>
<td>2001-02 (State of Victoria (DEET) 2001c)</td>
</tr>
</tbody>
</table>

### Notes
* Each state and territory presents its financial information about specific projects in different ways. This information is presented to provide an indication of the funding made available for computer hardware. It is not intended to be used as a strict quantitative tool for economic comparisons. That is, it is intended to add to the material presented in the body of the thesis.

** Total funding for Learning and Technology in Schools Program (LATIS) in 2001-02

# Grants to schools for computers and networking

##This funding is allocated to the ‘Laptops for Teachers’ program in the 2001-02 Budget Paper 2 as a Forward Estimate. Nothing is allocated on this budget line for 2001-02 financial year. The IT in Schools initiatives have nothing allocated in the 2001-02 or 2002-03 financial years, but have $15 million allocated as a Forward Estimate in 2003-04 (Government of Western Australia 2001).
### APPENDIX FIVE

**Table Eight: Australian states’ and territories’ expenditure on computer networking (local and wide area networks combined)**

<table>
<thead>
<tr>
<th>States &amp; Territories</th>
<th>Expenditure</th>
<th>Expenditure period</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>$0.5 million (WAN only) (ACT Government 2000)</td>
<td>2000-01 (ACT Government 2000)</td>
</tr>
<tr>
<td>NT</td>
<td>$7.8 million** (NT Treasury 2001)</td>
<td>Per annum (NT DoE 2001c)</td>
</tr>
<tr>
<td>QLD</td>
<td>$3.2 million (Queensland Government 2001a)</td>
<td>2001-02 (Queensland Government 2001a)</td>
</tr>
<tr>
<td>SA</td>
<td>$13.368 million# (Government of South Australia 2001a)</td>
<td>2001-02 (Government of South Australia 2001a)</td>
</tr>
<tr>
<td>TAS</td>
<td>$15 million## (Department of Treasury and Finance (TAS) 2000)</td>
<td>2000-01 (Department of Treasury and Finance (TAS) 2000)</td>
</tr>
<tr>
<td>VIC</td>
<td>$23 million^ (State of Victoria (DEET) 2001e)</td>
<td>2001-02 (State of Victoria (DEET) 2001e)</td>
</tr>
</tbody>
</table>

**Notes**

* Each state and territory presents its financial information about specific projects in different ways. This information is presented to provide an indication of the funding made available for local and wide area networking. It is not intended to be used as a strict quantitative tool for economic comparisons. That is, it is intended to add to the material presented in the body of the thesis.

** Total funding for Learning and Technology in Schools Program (LATIS) in 2001-02

#  This is the total allocated for the 2001-02 IT Strategy

### Grants to schools for computers and networking

^ Funding for networking and additional computers in schools. These computers are separate to the teachers’ notebook program.

^^ Nothing is allocated on this budget line for 2001-02 financial year. The IT in Schools initiatives have nothing allocated in the 2001-02 or 2002-03 financial years, but have $15 million allocated as a Forward Estimate in 2003-04 (Government of Western Australia 2001).
### Table Nine: Australian states’ and territories’ Microsoft licenses

<table>
<thead>
<tr>
<th>States &amp; Territories</th>
<th>Length of Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>1997–2000</td>
</tr>
<tr>
<td></td>
<td>(Parliament of ACT 1997)</td>
</tr>
<tr>
<td>NSW</td>
<td>2000–2004</td>
</tr>
<tr>
<td></td>
<td>(Parliament of NSW 2000)</td>
</tr>
<tr>
<td>NT</td>
<td>No Agreement</td>
</tr>
<tr>
<td>QLD</td>
<td>1999-2001</td>
</tr>
<tr>
<td></td>
<td>(EdNA 1999b, 2000b)</td>
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<tr>
<td>SA</td>
<td>1999-2001</td>
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<tr>
<td></td>
<td>(DETE (SA) 2000d)</td>
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<tr>
<td>TAS</td>
<td>1999-2001</td>
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<tr>
<td></td>
<td>(Department of Education (TAS) 2001b)</td>
</tr>
<tr>
<td>VIC</td>
<td>2000–2004</td>
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<tr>
<td></td>
<td>(Department of Treasury and Finance (Victoria) 2000)</td>
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<tr>
<td>WA</td>
<td>1999-2001</td>
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<td></td>
<td>(EdNA 1999b, 2000b)</td>
</tr>
</tbody>
</table>
APPENDIX SEVEN

SUMMARY OF POLICIES AND AGENCIES

WHOLE OF GOVERNMENT - COMMONWEALTH

The following agencies release government policies and administer public funds at a commonwealth ‘whole of government’ level, that have direct implications for the schooling sector. This Appendix provides additional information to the summary provided diagrammatically in Appendix Eight.

Prime Minister And Cabinet

A Ministerial Taskforce comprising the (then) federal Minister for Industry, Science and Resources; the (then) Minister for Education, Training and Youth Affairs; and the Minister for Communications, Information Technology and the Arts, were responsible for producing the Backing Australia’s Ability strategy (Commonwealth of Australia 2001a). Implementation of Backing Australia’s Ability is overseen by the Prime Minister, along with the federal Ministers for Industry, Resources and Tourism; Education, Science and Training; Communications, Information Technology and the Arts; and the federal Minister for Finance and Administration (Commonwealth of Australia 2001a).

Backing Australia’s Ability

Backing Australia’s Ability, five year $2.9 million initiative, was announced by the federal government in 2001 (Commonwealth of Australia 2001a). It is intended to build upon Investing for Growth (Commonwealth of Australia 1997). Backing Australia’s Ability was allocated $130 million over four years for use by government schools where the Enrolment Benchmark Adjustment (EBA) is triggered (Commonwealth of Australia 2001a). The Le@rning Federation Schools Online Curriculum Content Initiative
(SOCCI) was allocated $34 million over five years, which is matched by the respective states and territories (Commonwealth of Australia 2001a).

**Department of Communications, Information Technology and the Arts**
The Commonwealth Department of Communications, Information Technology and the Arts (Commonwealth DCITA) cover the policy areas pertinent to this study, of telecommunications, satellites, communications technologies and intellectual property (Commonwealth DCITA 2000). The following commonwealth agencies sit within DCITA and have produced policies and funding guidelines for the implementation of initiatives that have implications for school education.

**Networking the Nation**
Networking the Nation is the agency through which the commonwealth government, five-year $250 million project is managed. Known as the Regional Telecommunications Infrastructure Fund (RTIF), this initiative has been funded though the part privatisation of Telstra and is intended to help bridge the gaps in telecommunications services, access and costs between urban and non-urban Australia. Access to funding is through a competitive submission process (DCITA 1999b).

**National Office of the Information Economy (NOIE)**
NOIE was established in 1997. *Investing for Growth* (Commonwealth of Australia 1997) announced its establishment as a national ‘whole of government’ office for coordinating policy initiatives for the information economy. The government stated that it had established the National Office for the Information Economy (NOIE), [to] develop, coordinate and overview broad policy relating to the regulatory and legal environment for online activities, consistency of approach of the Commonwealth in international fora, and the application of new technology to the business of government (Commonwealth of Australia 1997: 68).

NOIE has responsibility across government for leading Australia’s
participation in the ‘information economy’. That is, NOIE has the prime responsibility for generating, facilitating, presiding over and coordinating commonwealth government policy on electronic commerce, online services and the Internet (Commonwealth of Australia, NOIE 2000c: 1). Education and training policies and strategies are within the NOIE oversight, as is reflected in the directions identified in A strategic framework for the information economy. Identifying priorities for action (Commonwealth of Australia, NOIE 1998b).

**Office for Government Online (OGO)**

In 1998 the Commonwealth Office of Government Information Technology (OGIT) was renamed the Office for Government Online. It is located within the Commonwealth Department for Communications, Information Technology and the Arts. The Office for Government Online has as its primary responsibility to implement the Prime Minister’s commitments made in the Investing for Growth (Commonwealth of Australia 1997) and reiterated in Backing Australia’s Ability (Commonwealth of Australia 2001a), of bringing all appropriate commonwealth services online via the Internet by 2001 (Commonwealth of Australia 2001a; Commonwealth of Australia, Office for Government Online 2000a). This strategy, called GovernmentOnline (sic): the Commonwealth Government’s Strategy requires individual government departments to identify and achieve their own initiatives consistent with priorities identified in this plan (Commonwealth of Australia, Office for Government Online, 2000). DETYA has developed an online action plan (Commonwealth Department of Education, Training and Youth Affairs 2000b).

**Other Ministerial Involvement In Policy Development**

Other ministerial involvement in policy development that impacts on the use of digital technologies in schools, occurs in two national ‘whole of government’ councils: the Ministerial Council for the Information Economy (MCIE) and the Online Council. The Commonwealth Minister for
Education is a member of both MCIE and the Ministerial Council on Employment, Education, Training and Youth Affairs (MCEETYA). An explanation of MCIE and the Online Council follows. MCEETYA will be outlined in the next part of this Appendix addressing schooling sector ministerial arrangements.

**Ministerial Council for the Information Economy (MCIE)**
The Prime Minister established the Ministerial Council for the Information Economy (MCIE) to coordinate ‘whole of government’ actions across the commonwealth government departments, to support Australia's participation in the ‘information economy’ (Commonwealth of Australia NOIE 2000b). This Ministerial Council essentially is a subcommittee of the federal government’s cabinet and is chaired by the Minister for Communications, Information Technology and the Arts. Its membership comprises the following commonwealth ministers:

- Deputy Prime Minister and Minister for Transport and Regional Services;
- Treasurer;
- Minister for Trade;
- Minister for [then] Employment, Workplace Relations and Small Business;
- Minister for Health and Aged care
- Minister for Finance and Administration;
- Minister for [then] Education, Training and Youth Affairs;
- Minister for [then] Industry, Science and Resources; and

Secretariat support for the MCIE is provided through NOIE.

**Online Council (OC)**
The Online Council (OC) is a national or commonwealth-state ministerial
group, and was established in 1997. It comprises senior ministers from the commonwealth, and ministers from the states and territories with state or territory level ‘whole of government’ responsibilities concerning the advocated use of digital technologies in government policies. This Council also includes a representative from the Australian Local Government Association (ALGA). The Online Council was created to promote consistent protocols for the standardised usage of digital services in and across governments, and it addresses issues concerning the growth of the ‘information economy’. Secretariat support for the Online Council also is provided through NOIE (Commonwealth of Australia NOIE 2000c: 1).

**Industry Input Into ‘Whole Of Government’ Policies**

In order to gain input from those working in industries using and generating digital technologies products, the Commonwealth government has established the Australian Information Economy Advisory Council (AIEAC). Membership of this group occurs with officers operating in a personal capacity rather being representative of the organisation in which the nominated councillor works. Nonetheless, the members of this advisory group are mainly senior officers drawn from digital technologies and telecommunications enterprises. Secretariat support for the AIEAC again, is provided through NOIE (Commonwealth of Australia, NOIE 2000d: 1).
SUMMARY OF POLICY AND BUDGET TEXTS REVIEWED

Commonwealth And National ‘Whole Of Government’

The following summary provides an overview of the policies and budget texts reviewed in undertaking this study.


Prime Minister's Science, Engineering and Innovation Council (PMSEIC). (2000). Australia's information and communications technology (ICT) research base. Driving the 'new economy'. Australia: Prime Minister's Science, Engineering and Innovation Council.
SCHOOL EDUCATION – COMMONWEALTH AND NATIONAL

Schooling sector government agencies operate at both the commonwealth and national levels. The following section summarises the ministerial and bureaucratic structures operating within the schooling sector.

MCEETYA

Established in 1994, the Ministerial Council on Employment, Education, Training and Youth Affairs (MCEETYA) was formed through the merging of three previous Ministerial Councils: the Australian Education Council (AEC), the Ministers of Vocational Education, Employment and Training (MOVEET), and the Youth Ministers Council (YMC). MCEETYA membership comprises Australian and New Zealand government Ministers at the commonwealth, state and territory levels, with responsibility for education, employment, training and youth affairs. The chair of the Council is rotated annually, and the Council is serviced by a secretariat funded by all the member governments (MCEETYA 2000b). MCEETYA has prepared and released a MCEETYA Joint statement on education and training in the information economy (MCEETYA 2000a).

Two companies report to MCEETYA: the Curriculum Corporation and Education.au.

Curriculum Corporation

The Curriculum Corporation was established in 1990. It is a company limited by guarantee, and is owned by all the Australian state, territory and Commonwealth Ministers of Education. The Curriculum Corporation Board comprises state, territory, commonwealth and New Zealand Ministers of Education, (or their representatives). Its major responsibilities are to develop, publish and disseminate teaching and learning materials for Australian schools (Curriculum Corporation, 2000c). These are increasingly being developed in a digital format. To support such a direction Curriculum Corporation has bought a part ownership of worldschool.com.
With the announcement of the SOCCI project, the Curriculum Corporation has been identified as the procurement agency for the initiative (Curriculum Corporation 2001: 1).

**Education.au (formerly Open Learning Technology Centre)**

Education.au is a company owned by the Ministers of Education and was formerly, the Open Learning Technology Centre (Education Network Australia (EdNA) 2000b). In 1995, MCEETYA agreed in principle to the creation of EdNA, with an electronic directory service known as EdNA Online. This is an education portal for use by the schools, vocational education and training and higher education sectors. Between the years 1995-96 to 1998-1999, the Commonwealth government has provided $3 million annually from specific administration funds to establish EdNA (Downes and Gibbons 1999).

Under the auspices of EdNA is the EdNA Reference Committee (ERC). This is an advisory committee to the MCEETYA. In addition the ERC is recognised by both MCEETYA and MCIE as the national forum for the provision of policy advice on issues concerning the use of digital technologies within the education and training sector (Commonwealth DETYA 2000b: 2-3).

**Commonwealth Department of Education, Science and Training (DEST) (previously Department of Education, Training and Youth Affairs (DETYA))**

The Commonwealth Department of Education, Science and Training’s (DEST) role is to attend to the education and training requirements of all Australians, and particularly its young people and to improve access to education for disadvantaged groups. To achieve this DETYA established a national policy framework for school level education, post-compulsory education and the transition between education and work (Commonwealth of Australia 1999).
DETYA identified three outcomes upon which to focus. The first was to provide support to school systems in order for students to achieve the National Goals of Schooling (Commonwealth DETYA 1999). The second was to support post school education and training providers supply individuals with the opportunities to achieve the skills required for work and life more generally. The third was to work with other Australian institutions to advance the knowledge base of Australia (Commonwealth DETYA 2000a). DETYA has prepared and released a policy called Learning for the knowledge society: an education and training action plan for the information economy (Commonwealth DETYA 2000a).

Financial support to some specific programs identified for advocating the use of digital technologies in schools, also is provided through DETYA. These programs and initiatives include the ‘Framework for Open Learning Programme’ (FOLP) and DEST also directs funds to the SOCCI. The operating costs for the Curriculum Corporation and Education.au also are directed through DETYA.

**Framework for Open Learning Programme (FOLP)**

FOLP was established in 1991. Originally it was established to inform Commonwealth departmental officers and the education and training community about developments in open learning/distance education, flexible delivery and options to achieve specific educational outcomes through the use of technology (Downes and Gibbons 1999: 1).

It is funded through an annual discretionary commonwealth budget line and it is through this that the Ministerial company, Education.au receives funding for the ongoing development and maintenance of EdNA. ‘Under FOLP the Commonwealth contributes 50 per cent of the core funding required for Education.au, with the remainder being contributed by State and Territories on a proportional basis’ (Meredyth et al 1999: 29).
FOLP however is broader than solely EdNA. It also provides funds for smaller specific projects that are coordinated by DEST. In the schooling sector, this funding has mostly been devolved to teacher associations (Downes and Gibbons 1999).

**Australian Education Systems Officials Committee**

At the 2001 MCEETYA meeting the Ministers endorsed the establishment of the Australian Education Systems Officials Committee (AESOC) which replaced the Conference of Education Systems Chief Executive Officers (CESCEO) Working Parties and the MCEETYA Standing Committee of Officials (Schools).

CESCEO comprised the Chief Executives of the school education systems around Australia. The chair of CESCEO and the associated secretariat rotated annually. In August 2000 CESCEO convened a sub committee to address online issues and developments. This committee comprised the Chief Executives of the education systems in South Australia, Tasmania, Queensland, and the Australian Capital Territory, and included a senior commonwealth officer. This committee became the Steering Committee for the five year Le@rning Federation (SOCCI) project. The CESCEO Curriculum Group provides the ‘authoritative voice on standards that are based on curriculum policy’ (SOCCI 2000: 13) for the Le@rning Federation (SOCCI) project.

The establishment of ASEOC has also seen the establishment of seven taskforces: schools resourcing; teacher quality and educational leadership; student learning and support services; information and communication technologies in schools; Indigenous and other targeted initiatives; transition from school; and performance measurement and reporting. Each Taskforce reports to MCEETYA and is chaired by a member of the former CESCEO. The Le@rning Federation (SOCCI) is located within the information and communication technologies in schools MCEETYA Taskforce (MCEETYA 2001).
SUMMARY OF POLICY AND BUDGET TEXTS REVIEWED

Commonwealth And National: Schools


Trinitas Pty Ltd. (2000). Delivering the promise. The case for rapidly expanding the digital curriculum resources available in Australian classrooms and for developing the digital content industry. (unpublished).
SCHOOL EDUCATION – STATE AND TERRITORY

As indicated in Chapter Four, each state and territory has legislative responsibility for the provision of schooling although the commonwealth does provide some financial assistance. Appendices One, Two and Eleven provide an overview of the state and territory school education structures.

State and Territories

Australian Capital Territory


New South Wales


**Northern Territory**


Queensland


South Australia


Tasmania


Victoria


Western Australia


Schools of Isolated and Distance Education (SIDE). (2000). *Schools of Isolated and Distance Education*. Western Australia: Schools of Isolated and Distance Education.

MINISTERIAL SPEECHES AND MEDIA RELEASES
(COMMONWEALTH AND STATE)

Carnell, K. (2000a). $18m to put the Clever Capital online. (Ministerial media release),

Carnell, K. (2000b). $300,000 investment by Microsoft for enhancing information technology skills in ACT education sector. (Ministerial media release),

http://www.mediastatements.wa.gov.../f9fae8175f...5e003b95fa?opendocumen [accessed 2001, June 3].


Howard, J. (2001a). Transcript of the Prime Minister the Hon John Howard MP Federation address and launch of 'Backing Australia's Ability'.


Johnson, R. (2000). Home-based computer program to bridge technology divide. (Ministerial media release),

Kemp, D. (2001). Opening address by the Hon Dr David Kemp.


### APPENDIX EIGHT

**Table Ten: Commonwealth government organisation for policy development implicating schools’ within the ‘information economy’**

<table>
<thead>
<tr>
<th><strong>Policy: Backing Australia’s Ability</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministerial Committee with responsibility for Backing Australia’s Ability</td>
</tr>
<tr>
<td>Prime Minister, Minister for Industry, Resources and Tourism#, Minister for Finance and Administration,</td>
</tr>
<tr>
<td>Minister for Communications, Information Technology and the Arts &amp; Minister for Education, Science and Training*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Minister for Communications, Information Technology and the Arts</strong></th>
<th><strong>Minister for Education, Science and Training</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry consultation</td>
<td>Political organisation</td>
</tr>
<tr>
<td><strong>Bureaucratic organisation whole of government</strong></td>
<td><strong>Schooling sector</strong></td>
</tr>
<tr>
<td>Australian Information Economy Advisory Committee (AIEAC)</td>
<td><strong>Political organisation</strong></td>
</tr>
<tr>
<td>Department of Communications, Information Technology and the Arts (DCITA)</td>
<td><strong>Ministerial Council for the Information Economy (MCIE)</strong></td>
</tr>
<tr>
<td>Networking the Nation</td>
<td>Policy: Learning for the knowledge society: An education and training action plan for the information economy</td>
</tr>
<tr>
<td>National Office of the Information Economy (NOIE)</td>
<td></td>
</tr>
<tr>
<td><strong>Notes</strong></td>
<td></td>
</tr>
<tr>
<td>The dotted lines indicate that the borders between the sections are permeable</td>
<td></td>
</tr>
<tr>
<td>* Previously Department of Education, Training and Youth Affairs</td>
<td></td>
</tr>
<tr>
<td># Previously Minister for Industry, Science and Resources</td>
<td></td>
</tr>
</tbody>
</table>

*Previously Department of Education, Science and Training*
# APPENDIX NINE

## CHARACTER DESCRIPTIONS*

| KM | Kathryn Moyle |
| DX | State level political operative |
| BX | State level political operative |
| GH | National chief executive officer |
| KL | National chief executive officer |
| DD | State public sector chief executive officer |
| CD | State public sector chief executive officer |
| OP | State public sector chief executive officer |
| EF | Senior commonwealth public sector bureaucrat |
| MN | Senior state public sector bureaucrat |
| QR | Senior state public sector bureaucrat |
| GG | Senior state public sector bureaucrat |
| IJ | National volunteer organisation |
| UV | Professional lobbyist. Federal level. (Teachers) |
| CC | Professional lobbyist. Federal level. (Parents) |
| ST | Senior officer within a digital technologies multinational company |
| AB | Senior officer within a telecommunications carrier |
| WX | Senior officer within a telecommunications carrier |
| YZ | Secondary public secondary school principal (face to face) |
| FF | Secondary public secondary school principal (face to face) |
| EW | Public primary school principal (face to face) |
| AZ | K-12 public school principal (distance education) |

This is a list of the characters quoted in the thesis. It is not the summary list of all those who participated in the research conversations. These summaries are provided in Chapter Three.
<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CY</td>
<td>K-12 director materials developer (distance education)</td>
</tr>
<tr>
<td>BB</td>
<td>K-12 materials developer (distance education)</td>
</tr>
<tr>
<td>AA</td>
<td>Parent with children undertaking distance education (remote location)</td>
</tr>
<tr>
<td>P1</td>
<td>Parent with children undertaking distance education (remote location)</td>
</tr>
<tr>
<td>P2</td>
<td>Parent with children undertaking distance education (remote location)</td>
</tr>
<tr>
<td>P3</td>
<td>Parent with children undertaking distance education (remote location)</td>
</tr>
<tr>
<td>P4</td>
<td>Parent with children undertaking distance education (remote location)</td>
</tr>
<tr>
<td>P5</td>
<td>Parent with children undertaking distance education (remote location)</td>
</tr>
<tr>
<td>EE</td>
<td>Volunteer educator</td>
</tr>
<tr>
<td>Student 1</td>
<td>Year 6 student</td>
</tr>
<tr>
<td>Student 2</td>
<td>Year 6 student</td>
</tr>
<tr>
<td>Student 3</td>
<td>Year 7 Student</td>
</tr>
<tr>
<td>Student 4</td>
<td>Year 7 student,</td>
</tr>
<tr>
<td>Student 5</td>
<td>Year 7 Student</td>
</tr>
<tr>
<td>Student 6</td>
<td>Year 12 Student</td>
</tr>
<tr>
<td>MM</td>
<td>First year teacher</td>
</tr>
</tbody>
</table>
## APPENDIX TEN

Table Eleven: States and territories government organisation for the provision of school education including the advocacy of using digital technologies

<table>
<thead>
<tr>
<th>Political responsibility Schools</th>
<th>ACT</th>
<th>NSW</th>
<th>NT</th>
<th>QLD</th>
<th>SA</th>
<th>TAS</th>
<th>VIC</th>
<th>WA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ministerial Council for Education, Employment, Training and Youth Affairs (MCEETYA)</strong></td>
<td><strong>Minister for Education and Attorney General</strong></td>
<td><strong>Minister for Education and Training</strong></td>
<td><strong>Minister for School Education</strong></td>
<td><strong>Minister for Education</strong></td>
<td><strong>Minister of Education, Training and Employment</strong></td>
<td><strong>Minister for Education</strong></td>
<td><strong>Minister for Education</strong></td>
<td></td>
</tr>
<tr>
<td><strong>School Education Departments</strong></td>
<td><strong>Department of Education and Community Services (DECS)</strong></td>
<td><strong>NSW Department of Education and Training (DET)</strong></td>
<td><strong>Department of Education (DoE)</strong></td>
<td><strong>Education Queensland (EQ)</strong></td>
<td><strong>Department of Education, Training and Employment (DETE)</strong></td>
<td><strong>Department of Education, Employment and Training (DEET)</strong></td>
<td><strong>Education Department Western Australia (EDWA)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Digital technologies policies</strong></td>
<td><strong>Information Technology Services in Education</strong></td>
<td><strong>Information and Communication Technologies Strategic Plan 2000-2003</strong></td>
<td><strong>Learning and Technology In Schools (LATIS)</strong></td>
<td><strong>Computers in Learning policy and guidelines</strong></td>
<td><strong>DECS tech 2001</strong></td>
<td><strong>Learning Together</strong></td>
<td><strong>Information and Communication Strategy 2000-2004</strong></td>
<td><strong>Technology in Schools</strong></td>
</tr>
<tr>
<td><strong>Centres of Excellence</strong></td>
<td><strong>Centre for IT Excellence identified for development in 2001-02 budget</strong></td>
<td><strong>School of the Future</strong></td>
<td><strong>No specialist centre announced</strong></td>
<td><strong>Centres of Excellence: maths, science, technology identified in 2001-02 budget</strong></td>
<td><strong>Technology School of the Future</strong></td>
<td><strong>Centre of Excellence in Online Learning</strong></td>
<td><strong>Centres of Excellence: maths, science, technology identified in 2001-02 budget</strong></td>
<td><strong>No specialist center announced</strong></td>
</tr>
<tr>
<td><strong>Distance education</strong></td>
<td><strong>Not delivered centrally</strong></td>
<td><strong>OTEN-DE</strong></td>
<td><strong>NT Open Education Centre</strong></td>
<td><strong>AccessEd Virtual Schooling</strong></td>
<td><strong>Open Access College</strong></td>
<td><strong>Tasmanian Open Learning Service</strong></td>
<td><strong>Distance Education Centre, Victoria</strong></td>
<td><strong>Schools of Isolated and Distance Education</strong></td>
</tr>
</tbody>
</table>
## APPENDIX ELEVEN

Table Twelve: States/territories membership of the Online Council, departments with ‘whole of government’ digital technologies policy responsibilities and the policies, and public schooling sector digital technologies policies

<table>
<thead>
<tr>
<th>State/Territory</th>
<th>State/Territory Membership of the Online Council*</th>
<th>State/Territory Wide 'Whole of Government' Digital Technologies Policies</th>
<th>Education Department Digital Technologies Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAS</td>
<td>Premier and Minister for State Development (Cmth NOIE 2001)</td>
<td>E-Services Group within Department of Premier and Cabinet (Department of Premier and Cabinet (TAS) 2000)</td>
<td>Information and Communications Technologies Policy Framework (Tasmania Online 2000)</td>
</tr>
</tbody>
</table>

**Notes**

* Politicians with ‘whole of government’ responsibilities


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Correspondence School of South Australia. (1920). Journal No 1. Adelaide, South Australia: unpublished journal.


Education Department, Adelaide. (1940). The education gazette. Adelaide, South Australia: Education Department, Adelaide.


Education Department of South Australia. (1938). The magazine of the Correspondence School. Adelaide, South Australia: Education Department of South Australia.


*History of education review.* Australia: Australian and New Zealand History of Education Society.


Journal of multimedia and hypermedia. USA. Association for the Advancement of Computing in Education (AACE).


Moyle, K. (2000). Identifying government initiatives that promote using information and communication technologies in distance education. The dawning of opportunity. Conference Proceedings for the Australasian Association of Distance Education Schools (AADES) and Society for the Provision of Education in Rural Australia (SPERA) 2000 Conference, July 1-4, Australia: Australasian Association of Distance Education Schools and Society for the Provision of Education in Rural Australia.


Open and Distance Learning Association of Australia (ODLAA). Distance Education. Australia: Open and Distance Learning Association of Australia.


Prime Minister's Science, Engineering and Innovation Council (PMSEIC). (2000). Australia's information and communications technology (ICT) research base. Driving the 'new economy'. Australia: Prime Minister's Science, Engineering and Innovation Council.


Schools of Isolated and Distance Education (SIDE). (2000). Schools of Isolated and Distance Education Western Australia: Schools of Isolated and Distance Education.


South Australian Education Department. (1984). Distance education. Steering committee report to the senior executive of South Australian Education Department. Adelaide: South Australian Education Department.


Trinitas Pty Ltd. (2000). Delivering the promise. The case for rapidly expanding the digital curriculum resources available in Australian classrooms and for developing the digital content industry. (unpublished).


PUBLICATIONS

During the period as a PhD Candidate the following papers have been prepared and published in full.

**PEER-REFEREED FROM FULL PAPERS**


**PEER-REFEREED FROM ABSTRACTS**

Australia: Australasian Association of Distance Education Schools (AADES) and Society for the Provision of Education in Rural Australia (SPERA).

INVITED PAPERS


SELECTED PARTICIPATION