STUDENT LEARNING APPROACHES TO UNDERSTANDING FINANCIAL STATEMENTS

Author’s Name; Affiliation; Contact Numbers and Address

Dr Irene Tempone
School of Business, Swinburne University of Technology
Internal Mail No. 23
P.O.Box 218
Hawthorn 3122
Victoria, Australia
Phone: + 61 3 9214 8424
Fax: + 61 3 9819 2117
Email: itempone@swin.edu.au
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ABSTRACT

Students all encounter what appears to be the same teaching experience and yet have vastly different learning experiences. This problem is a growing one, given the ‘massification’ of higher education. This paper examines variation in student learning in accounting. Three student cohorts were interviewed, after completion of an accounting assignment, about the way in which they approached the assignment. From the phenomenographic analysis of transcripts three aspects of approach/experience were identified: group work; theory to practice and understanding financial statements. These three approaches were matched against Biggs 3P’s of student learning, presage, process, and product. The majority of students responded at the lower order or surface levels of approach across all three aspects. This however was not consistent across all cohorts where the educational and cultural background of the particular cohorts led to differing concentrations of student responses. The accounting profession and its dissatisfaction with current levels of generic skills demonstrated by accounting graduates, and the resultant pressure being placed on academics, is also explored.

Keywords: financial statements; student learning approaches; phenomenography
BACKGROUND
This study this paper is based on was structured on the Biggs 3P student learning model, the components of which are presage, process and product (Biggs, 1993; Biggs, 1999). The study considered deep and surface approaches to learning and the relatedness of student approaches to learning outcomes (Saljo, 1979; Saljo, 1984; Marton, 1988; Marton and Saljo, 1976a; Marton and Saljo, 1984; Ramsden, 1992). Qualitative differences in outcome are likely to be associated with corresponding differences in the process of learning (Marton and Saljo, 1976a). Phenomenography underpinned the method employed in the study. Phenomenography leads to the construction of hierarchically ranked categories of description which comprise an outcome space (Marton, 1993; Svensson, 1977; Marton and Booth, 1997; Saljo, 1994). The Biggs 3P model was matched against the three areas of approach/experience identified in the results of this study. Presage was aligned with group work, process with theory to practice and product with understanding financial statements.

Presage factors represent those the students bring to the experience and also include their expectations of the new experience. Both student and teaching presage factors exist and impact on learning outcomes. Student presage factors include prior knowledge and abilities and preferred ways of learning, while teaching presage factors include contextual factors, the students’ perception of the classroom, the teaching, and the assessment (Biggs, 1993; Sangster and McCombie, 1993; Pask, 1976; Kolb, 1984; Wierstra and de Jong, 1999; Auyeng and Sands, 1996). Preferred ways of learning encompass dominant personality types of accounting students, as determined by the Myer-Briggs Type Indicator (MBTI) (Booth and Winzar, 1993; Jacoby, unpublished; Briggs and Myer, 1987). Preferred ways of learning are also attributable to cultural factors as presented by Hofstede in a multi-cultural study of middle managers and Auyeng and Sands on accounting students from differing cultural backgrounds (Hofstede, 1991; Auyeng and Sands, 1996). Accounting students failure to engage with the subject matter in a meaningful way was also a factor in student presage, with academics and the profession questioning the suitability of graduates for the accounting profession (McKay and Kember, 1997; American Accounting Association, 1989; Institute of Chartered Accountants in Australia, 1994; Patten and Williams, 1990). Studies have identified a dominance of surface approaches exhibited by accounting students (Chan et al. 1989).

Contextual presage factors encompass the way in which students perceive the classroom, the workload and the assessment with much attention being paid to the way in which academics both identify and modify such contextual factors in order to bring about desirable learning outcomes (Entwistle and Ramsden, 1983; Entwistle and Tait, 1990; Bowden et al. 1987; Sharma, 1997; Jackling and Wigg, 1997; Gow et al. 1994; Roush and Smith, 1997).

Process factors in the 3P model consider the actions taken to achieve certain outcomes. In student learning the debate is around the placement of approaches, as either process factors (Biggs, 1993) or mid-way between process and product (Prosser and Trigwell, 1999). Studies have linked surface approaches with lower order outcomes and deep approaches with higher order outcomes (Entwistle and Ramsden, 1983). Students can be pushed into surface approaches by the teaching and assessment strategies adopted, but not as readily into deep approaches (Bowden et al. 1987;
Ramsden et al. 1986). Studies which addressed ways in which this has been attempted suggest that problem-solving and experiential learning may have some success (Laurillard, 1984; Andresen et al. 1995; Boud and Feletti, 1991). A recent study of accounting students confirmed earlier studies which reported that higher scores for surface approaches were linked with less successful academic outcomes and on the difficulty of guiding students into deep approaches and the resultant successful academic outcomes (Booth et al. 1999; Ramsden et al. 1986; Martin and Ramsden, 1987; Bowden et al. 1987).

The debate between academics, employers and other stakeholders has centred on the importance of generic skills/graduate attributes developed in undergraduate courses. Some professions have been prescriptive as to the skills to be incorporated into courses (Institution of Engineers Australia (IEAust), 1999), while others have made comments for academics to act upon (Johns, 1997; Institute of Chartered Accountants in Australia, 1994). This includes the auditing of generic skills addressed in accounting undergraduate courses by way of the Core Curriculum Matrix by the professional accounting bodies (Australian Society of Certified Practising Accountants and Institute of Chartered Accountants in Australia, 1996). The Department of Education, Training and Youth Affairs (DETYA) recently commissioned the Australian Council for Educational Research (ACER) to assess graduate skills across faculties on a number of key graduate skills (Australian Council for Educational Research (ACER), 2000). The debate over generic skills has not been confined to accounting and engineering graduates. Much of the defence of undergraduate arts courses, in the face of initial low employability of arts graduates, has been based on reported high levels of generic skills as assessed sometime after graduation (Norton, 2000; Dench, 2000; Macintyre, 2000).

Product, the third element of Biggs’ 3P model focuses on the outcome of the process employed in the learning process. Approach to understanding financial statements was identified as the product of the assignment in this study. Learning approaches and outcomes were ordered hierarchically. Qualitatively better outcomes are linked to deep or higher order approaches to learning, and lesser outcomes with surface or lower order approaches to learning. Study Process Questionnaires have been used to establish student approaches to study and learning, as a further tool in affecting learning outcomes (Booth et al. 1999; Entwistle and Ramsden, 1983; Biggs, 1988; Kings, unpublished b; Martin, 1999).

There is dissatisfaction by the accounting profession with the generic skills of graduating students. (Nelson, 1995; American Accounting Association, 1989; Institute of Chartered Accountants in Australia, 1994). Workload and generic skill issues are also identified by exiting students in Australia as areas of dissatisfaction over a number of years (Johnson, 1997; Johnson, 1999; Martin, 1999).

In summary, literature of relevance to this study derives from student learning literature, and in particular the Biggs 3P model. Deep and surface learning approaches were fundamental to the study, with phenomenographic methodology underpinning the study. Student learning in accounting has not been extensively researched, but significant contributions to the literature are considered in this paper.
METHOD
This study examined variation in student approaches to/experiences of learning in accounting. Students completed an assignment on the analysis and interpretation of financial statements and were interviewed on how they approached the assignment. Students also completed a study process questionnaire on how they approached study in general. The transcripts were analysed using phenomenographic methodology; the questionnaires statistically using SPSS for Windows. Phenomenography was selected above other qualitative methodology for its applicability to pedagogical studies (Marton, 1993; Marton and Booth,1997). Phenomenography is described as

A research method adapted for mapping the qualitatively different ways in which people experience, conceptualise, perceive, and understand various aspects of, and phenomena in, the world around them (Marton, 1986 p. 31).

Phenomenography allows variation to be mapped, by way of an outcome space, which plots the range of variation experienced by students in a study. Three aspects of approach were identified in the study, for which separate outcome spaces were mapped.

The cohorts of the study were from the Australian Program of Training for Eastern Europe (APTEE) students, Graduate Certificate of Business Administration students and Undergraduate students. Extracts of transcripts used are identified with the prefixes A (APTEE students), G (Graduate Certificate of Business Administration students) and U (Undergraduate students). All three cohorts were undertaking initial studies in accounting in a subject called Accounting for Managers. Letters of invitation were sent to all members of each cohort. Thirty-five interviews were arranged from the three cohorts. The interviews were semi-structured and followed the phenomenographic method with the interviewer being guided in questioning from the response of the interviewee, rather than adhering to a set regime and sequence of questions.

The assignment provided background information, three years data and instructions to students on the issues to analyse and resolve in a report to management. Three aspects emerged from the analysis of interviews. These were variation in student approaches to/experiences of:

- group work
- the relationship of theory to practice
- understanding of financial statements.

An outcome space for each of these aspects emerged from the analysis. These represented hierarchical representations of student approaches, with the responses ranging from the lowest to highest order. A further divide was made of the responses into higher and lower order, or deep and surface approaches.

The quantitative analysis, of both the interview classifications and the questionnaire responses, was conducted using SPSS for Windows. This provided frequency distributions, cross-tabulations, phi co-efficients and mean ranks. These results, while
This paper will focus on the third approach/experience, understanding financial statements.

Some key questions asked of students in relation to their understanding of financial statements were:
- How did you approach this assignment?
- What did you understand by the terms rate of return, working capital and financial stability?
- What did you think you learned from the assignment about rate of return, working capital and financial stability?
- What data in the assignment were most helpful in assisting your understanding of the issues?
- How did you attempt to solve the company's problems?

In summary, the study used qualitative data by way of interview transcripts as the prime data source. It relied on qualitative methodology to collect and analyse the data, namely phenomenography. Statistical analysis of both qualitative and quantitative data supported the findings.

RESULTS

This paper reports on the variation in approach/experience of students in understanding financial statements. The results emerged from the analysis of interview transcripts on completion of an accounting assignment. The results reported on that variation within the total cohort and between cohorts. The outcome space and categories of description developed from the data are illustrated in Tables 1 and 2.

Take in Table I

The categories of description which comprised the approaches to/experiences of financial statements with an explanation of the meanings are presented. The categories are ranked from lowest to highest order of approach/experience, with a further two point divide of lower and higher order approaches/experiences.

Take in Table II

In Category A, the intention was to focus on a procedure, for example, finding a ratio/formula sheet in a textbook. The strategy was the application of that procedure to all the data.

Students saw the task at hand as focusing on one procedure, namely the reproducing of the set of financial ratios to which they have been exposed, and then using them throughout the assignment in the same manner as was shown in the classroom. The students found meaning by focusing on a particular procedure, and then attempted to structure the task by applying that procedure to all the data.

A student comment which illustrated category A was:
I prepared a sheet with how to do all the calculations by looking at it from the book. There’s one chapter which has all the instructions for how to do all the ratios, and I knocked the ratios together and then just analysed. I didn’t have a really planned process but I tend to do that a lot. U2

In Category B, the intention of the approach/experience shifted slightly to focusing on the selection of an issue, such as asset turnover, which was seen by students as being at the core of the problem. The strategy was the application of the procedures relevant to that issue to only the relevant data. This approach/experience indicated greater selectivity in what and how it was being done.

Students conceived the task as selecting the key issue, which could be cash shortages or excessive stock, and applying that procedure to the relevant data, for example the cash and stock holdings of the business. The student searched for meaning by locating the key issue of concern, and then attempted to structure the task by applying the procedure to only the relevant data rather than all the data as in the earlier case.

Student comments which illustrated category B were:

Because there are a few that are linked. Like, you’ve got all the turnovers, inventory turnover, asset turnover, fixed asset turnover. I’d probably put all those together because they are all linked to each other. U1

With accounting you’ve got to identify all the factors, of turnover increasing then you’ve got to put it down the right way. U12

In Category C, the intention was to focus on the identification of key components of the issue, such as debtors’ turnover. Similarly to Category B, the strategy was to apply those procedures to only the relevant data. The key components of the issue, not just the issue itself, were broken down for analysis.

A higher order approach/experience than Category B, it involved the students conceiving the task as the selection of key components of the issue, for example, liquidity or working capital problems, and searching for meaning by applying the procedure as in Category B above only to the relevant data, for example the current assets and current liabilities of the business.

Student comments which illustrated category C were:

The most interesting thing was the turnover—the accounts receivable and payable. They were switched around. They should have been the other way around. They were paying their creditors quickly, which is all very well and good, but depleting their reserves in the bank and they had terrible—they had very very low cash at bank which was another problem because they were going to have to consider doing something like extending their
overdraft or borrowing long term for short term debt—to cut the short term debt. G4

Return on assets improved immensely from when they put the new machines in. I think that was a key issue. Net profit also jumped fairly significantly too. G11

Well, all the ratios would have improved just about, especially the two most important ones, the debt to total asset ratio—if they had used the money they gained from selling off the stock and not re-stocking, they could have reduced their debts. U2

Working capital—that’s money you’ve invested and the term itself implies how that money you have invested is working for you. And then through other terms it’s broken down into more manageable and/or identifiable parts so that you can identify where it’s working for you and where it isn’t working for you. You’d also link stock build up to increase in creditors and as a result you would also link the increase in creditors to reduction in net profit and also a reduction in debt to total assets. U3

I thought it was just a case of trying to look at the trends for each margin. Like with the net profit margin, net profit margins depend on the gross profit margin and the operating expenses. So it was just a matter of trying to break down the ratios into their smallest possible forms to try and find out the reasons why the company went worse in the next couple of years. U13

In Category D, the intention was to see the problem in a much broader context, ranging from consideration of the economy at a macro level, or communication between workplace departments at a micro level. The strategy involved the consideration of additional non-financial data in order to address the problem. This differed from the earlier categories in that the approach/experience went beyond the problem as presented in the data given, and looked beyond the financial information given to non-financial data with which students addressed the problem.

Students conceived the task as viewing the problem in a broader context, for example that ratios were only one component of coming to terms with the business’s performance, and searched for meaning by considering additional non-financial data, such as market share and position in the industry.

Student comments which illustrated category D were:

But they had to look at their labour force, the way they do things and keep improving the business and maybe the market, get new customers. You have to do that otherwise you don’t have a business. G11

But the other thing that also went through my mind, there may be something specific that I understood they had been trying to
address by bringing in machinery and what have you. Why is it that there is still a problem? Are you doing long runs of something that isn’t moving, that isn’t required any further. G7.

There was no point in production thinking they needed to keep inventory for making bolts when somebody else thought they needed to be keeping inventory to make nuts. So there needed to be an improvement in communication between departments. G5

In this case I might choose a variant from real life—I try to find out if there’s another option—maybe use the old equipment to produce something different. But this is another approach—not an accounting problem. A10

It wasn’t just a matter of looking at the financial data but also taking into consideration the recession, other economic constraints on them, and other conditions that the company was working under. G2

Finally, in Category E, the intention was still to focus on perceiving the problem in a broader context as in Category D, but the strategy went further. It involved a forward-looking aspect by making comments for the future well being of the business, such as setting new goals on the basis of the changed conditions at both the macro and micro levels. The problem is positioned within a broader context, and had a perspective which looked to the past, contrary to all the other approaches/experiences, not to examine why the problems may have occurred, but in order to solve the problems and make recommendations for the future.

Similarly to Category D above, students in Category E conceived the task as viewing the problem in a broader context, but their search for meaning involved making recommendations for the future, based on their findings about the problem in context.

Student comments which illustrated category E were:

The other recommendation was in regards to their accounts receivable turnover time. I know that had blown out and I recommended to review their billing procedures. There might be one or two customers who were taking longer than they should and that they might want to review those procedures. G5

I was a bit worried about the products. I thought they should, with the low profit products, contract these out to smaller operators and create a niche market where they’re going to make decent profit margins. G11

Going from their recommendations, I would have proceeded to cut back on production even though I knew that the workers might be a little disgruntled, it’s better to have disgruntled workers than workers out of a job permanently. So I would cut back on production and I would raise the selling price and see
how—and hold it for a year, O.K., to see its full impact. I would always remain in contact with my accountants throughout, even through the good years. If I’d gotten on top of it I could implement that plan straight away. But the plan would be based on many things like whether I’d be better off increasing my sales price and losing some people rather than maintaining my sales price and losing the profit. U3

To straight away stop the mass production and slow the production of stock down and also stop the amount of raw materials being produced and bought. If they could maybe wait until the trade picks up again, if not they have got to try another avenue somewhere. They could have bulk discounts or a sale now and then. Older stock they could reduce the price on it. It would get it moving and would probably get more money in. They might have to advertise. U6

Two further comments illustrated the students’ ability to look beyond the assignment itself and take what was learned into their own realm.

So, using the knowledge that I’ve gained from the accounting section I’ve been able to apply it to my company and I’ve been able to analyse what I’ve done over the past four years and I’ve set myself a new set of goals in the accounting side of things. G6

I know from my own company and working capital and trying to relate it back and then trying to work out where we fitted in and I found doing this I was also looking at the balance sheet and I was looking at our balance sheet in a different way as well. Working capital was interesting—as just a summation. I looked at this as more than just the balancing of things. G9

**SCENARIO OF OUTCOMES AND APPROACHES/EXPERIENCES ON ONE ACCOUNTING ISSUE**

Taking problematic stock turnover, the firm’s holdings of stocks held for sale taking increasing and excessive numbers of days to be sold as a key accounting issue in the assignment, the manner in which students might deal with this in terms of each of the five categories of approaches to/experience of understanding financial statements can be explored. A scenario exemplifying all five approaches/experiences, as they impacted on this one accounting issue, can be constructed to illustrate the different outcomes due to differences in approach/experience.

In Category A the student would not be identifying particular accounting issues to address, but would use the formulae given in class to apply to all the financial data. Stock turnover would be calculated as one of a number of ratios, but would not be specifically dealt with as a key issue.

In Category B the issue of excessive stock was identified as a problem, and that issue was applied to the relevant data.
In Category C the component parts of the stock turnover were addressed, either excessive purchasing or reduced sales with the components of the ratio being seen as contributing factors which were then applied to the relevant data.

In Category D the stock turnover was seen in a broader context, the contextual factors present in both the firm itself (the micro level) and the wider economic climate in which the firm was trading (the macro level). Underlying issues leading to the build-up of stocks, the downturn in sales, the mismatch between stock levels and sales levels, for example, were sought. Factors within the firm and its structure were explored as possible causes of the problem.

In Category E the underlying factors contributing to the slowing down of the stock turnover were examined in addition to problems such as occurred with the labour force, markets, production runs or the recession and other economic constraints. Possible solutions were however, also explored. These solutions were based in the root causes of the problems so as to be addressed and overcome. They included solutions such as better industrial relations policy, seeking out new markets or finding a new optimal production run, at a lower level, to meet these changed circumstances.

**DISTRIBUTION OF STUDENT RESPONSES**

The distribution of student responses for the range of approaches/experiences can be considered by plotting responses as a bar chart to indicate the frequency of students in particular categories of the approach to/experience of understanding financial statements.

Figure 1 represents the distribution of student responses within each of the categories of approaches to/experiences of understanding financial statements. The most frequent responses are in categories B, C and D with the most frequent response being category C. (The category NR represents non-responses to this question).

Take in Figure 1

**LOWER AND HIGHER ORDER APPROACHES TO/EXPERIENCES OF UNDERSTANDING FINANCIAL STATEMENTS**

From the naming of the approaches/experiences it can be seen that they fall into two broad categories. First, a procedural approach/experience which has gradations of discrimination applied to both the procedures chosen and the data selected upon which to exercise the procedures. These encompassed categories A, B and C. Second, a broader-based approach/experience which looked beyond the financial data in the search for meaning in relation to understanding of the company as expressed by its financial statements. Category D, the first of these broader-based approaches/experiences looked to non-financial data for understanding of the company’s position, while Category E, the second, looked to this information as a base from which to launch predictions which might suggest strategies for the future well-being of the company.

This division parallels the surface/deep divide originally described and developed by Marton and Saljo which identified a major distinction concerning students’ intentions.
They found that some students intended only to address the demands of the question, whereas others intended to consider the meaning within the problem or situation (Marton and Saljo, 1976a; Marton and Saljo, 1976b). In this study it is possible to make a broad division between those students who responded with an intention to attend only to the demands of the task, a surface approach; and those whose intention was to respond to the meaning, a deep approach.

This division can be applied to those who responded with a surface approach, those who adopted a procedural approach to/experience of the assignment. Their intention was to find the right procedure, issue or component parts of the issue and apply that to the data. It appeared as though they were looking for the key which would unlock the secret which comprised the analysis of financial statements. Students adopting a deep approach, on the other hand, had a different intention. They were looking for meaning in the exercise and addressed the problem in its broader context. They sought information other than that which was supplied to them within the assignment itself, and looked to the future of the company as part of their search for meaning.

There was variation between the cohorts across categories. This is illustrated in Table III.

Take in Table III

Table III illustrates the spread across the cohorts and across the categories of student responses to the approach to/experience of understanding financial statements. Categories with greatest level of response were C, D then B. The highest concentration was at the lower order level with 24 of the 35 respondents in Categories A, B and C, the lower order levels of approach/experience. The Graduate Certificate cohort was the strongest of all three, as indicated by the mean rank of 20, followed closed by the Undergraduate cohort at 19.4, but with the APTEE cohort considerably weaker at a mean rank of 14.3.

Take in Figure 2

Figure 2 represents the distribution of student responses on this two-point division of approach to/experience of understanding financial statements by cohort. Although the most frequent responses were in the lower order or surface approaches (24 students in total) with fewer responses at the higher order or deep approaches (11 students in total), a seen in Table III, this was not consistent across all cohorts with the Graduate Certificate cohort having a more even spread across higher and lower order approaches, with a slight dominance at the higher order.

**DISCUSSION**

Five qualitatively different approaches to/experiences of understanding financial statements were identified in the study. At the lowest level approach to/experience of understanding financial statements, the task was, for students, to find one procedure in order to gain insights into financial information. This is often a mechanical and procedural means of analysing complex data and does not enable the student to engage with the material in such a manner as to be able to provide useful insights to management about the current and potential operations of the company—the key
objective of analysing financial data. At the highest level the task was, for students, to
seek meaning in the statements by considering them within both a micro and macro
context, namely at the level of the firm and the broader economy, in order to bring to
this complex data the full range of factors which may have created the situation as it
currently stands, or which can be utilised in order to remedy the situation for the
future.

In their attempts to find meaning in financial statements, students adopted a number
of approaches/experiences which could be analysed simply as above with a single
divide between deep and surface intentions. This level of complexity in the analysis
separated surface approaches from deep approaches—looking to the words and
symbols for meaning as against seeking to engage with the subject matter at the
deeper level. Students saw the task in different ways and consequently what they did
was different. The approach students took had direct ramifications on the learning
outcomes they achieved. Students who adopted surface approaches had one
dimensional outcomes which focused on the financial ratios themselves without
seeking out underlying problems or future directions the company could take.
Students adopting deep approaches had interrelated outcomes which attended to the
firm’s problems by addressing the underlying causes of those problems. This
illustrated Marton and Saljo’s original study which showed empirically that approach
to learning related to outcome (Marton and Saljo, 1976a). The decision to focus on the
text itself carries with it an implicit decision to ignore the meaning of that text
(Entwistle and Marton, 1984).

The Graduate Certificate student cohort, which was strongest (with a mean rank of
20) in this approach/experience, had category D as its most dominant response
category. The students’ approach to/experience of understanding financial statements
was most commonly expressed as a broader-based approach/experience with an
historical focus. The Undergraduate cohort was strong but not as strong (with a mean
rank of 19.4) as the Graduate Certificate cohort, with its dominant responses evenly
spread between categories B and D. The APTEE cohort was the weakest of the three
cohorts (with a mean rank of 14.3), with category A as its most dominant response.

DOMINANCE OF SURFACE APPROACHES TO/EXPERIENCES OF
LEARNING IN ACCOUNTING STUDENTS
There are two major explanations for the dominance of surface approaches
to/experiences of learning in accounting students. They are the nature and background
of the students themselves and the workload in accounting disciplines, both that
perceived by students and that actually demanded by the accounting profession.
Studies indicate accounting is attracting students with surface approaches (Chan et al.
1989). Students responded negatively to Graduate Careers Council of Australia
(GCCA) exit surveys on the appropriateness of workload in accounting. The
professional bodies, by auditing generic skills existent in undergraduate courses, and
by applying pressure to increase generic skills in accounting courses add to the
increased workload which is observed to push students into surface approaches
(Australian Society of Certified Practising Accountants and Institute of Chartered
Accountants in Australia, 1996; Johnson,1999; Ramsden,1992). Choice of certain
assessment methods used in response to declining academic numbers can also encourage surface approaches (Tempone and Martin, 2000).

NATURE AND BACKGROUND OF ACCOUNTING STUDENTS

The nature and background of students emanates from two sources, first from the students themselves and second from professional accounting requirements. Sangster and McCombie found that prior learning in accounting was a factor in performance of students. Students with prior learning performed better when asked to analyse company data over a four year period, than students without prior learning, whether that prior learning was in first year or in some other context (Sangster and McCombie, 1993). The Graduate Certificate cohort in this study confirmed this finding as they were the most likely, as a cohort, to have had prior experience, and were the strongest among the cohorts in all three aspects of the assignment.

Studies of practising accountants in both the UK and USA have found a personality profile for practising accountants, with a 1980 study by Jacoby:

Based on a sample of staff from the auditing, taxation and management consultancy specialisations of three ‘Big Eight’ public accounting firms, with high frequencies of all TJ (Thinking Judgement) types (55%). STJ (Sensation, Thinking, Judgement) type comprised about 40% with ISTJ type (Intuition, Sensation, Thinking, Judgement) being the dominant single type (Booth and Winzar, 1993 p. 111).

One of the few studies to investigate MBTI profiles of accounting students was undertaken at three Australian universities in 1987 and 1992 by Booth and Winzar. Their findings endorse the study by Jacoby with the bias in the sample towards the two STJ types (42.8%) with the ISTJ type the most common (26.7%) (Booth and Winzar, 1993).

The predominance of ISTJ personality types among accounting students indicates to academics that:

Many accounting students should prefer structured learning experiences which present rules and concepts; develop arguments in a step-by-step fashion; use repetitive, concrete, tangible examples with only minor variation on a theme; and give specific assessment feedback on work with tangible reasons for errors. The STJ majority of accounting students may prefer teaching strategies that are highly logical, systematic and structured, and start from concrete examples and rules rather than general concepts (Booth and Winzar, 1993 p. 114).

When examining the contextual issues which impact on learning approaches, teachers could consider the type of teaching environment to which accounting students personality types have a positive bias. If teachers could teach to these strengths they could also address the weaknesses of that personality type and attempt to strengthen these areas. Such areas, as identified by Moody, and Lawrence are: communication skills; dealing with unstructured problems; undervaluing of the human side of
problems; and reaching premature closure on problems (Moody, 1988; Lawrence, 1982; Booth and Winzar, 1993).

Auyeng and Sands used Hofstede’s line of argument that the core dimension of cultural variability explains differences in accounting students’ learning styles, which influences approach to/experience of understanding financial statements (Auyeng and Sands, 1996; Hofstede, 1991). The factor used from Hofstede’s study, the collectivism/individualism index, was supported by Kolb’s Learning Style Model (Kolb, 1985). The three cultural groups of students considered in that study were from Hong Kong, Taiwan and Australia and the researchers asserted that the collectivist/individualist cultural orientations were reflected in their learning styles. This could be a factor in explaining the difference in learning styles and preferences of the APTEE students as against the two cohorts of local students.

WORKLOAD (PERCEIVED AND ACTUAL) IN THE ACCOUNTING DISCIPLINE

The student learning literature makes significant comment on the pressure on students to adopt surface approaches to learning. Results of Entwistle’s Lancaster Approaches to Studying Questionnaire, an adaptation of the Biggs Study Process Questionnaire (Ramsden, 1992) claims a key factor in pushing students into surface approaches is perceived excessive workload.

This was in evidence in the first approach to/experience identified in this study; of group work, where students formed groups in order to divide up the workload, which was the lowest order approach/experience where group work was undertaken (Tempone and Martin, 1999). It was also in evidence in approach to/experience of understanding financial statements, where students, partially through perceived work pressures, limited themselves only to the data provided in the assignment rather than looking beyond into the commercial environment or into the history of the firm to consider other data.

The dominance of surface or lower order approaches/experiences was illustrated in all aspects of the assignment, and particularly in understanding financial statements where Categories A, B and C respondents adopted a procedural approach/experience, which focused on the surface requirements of the assignment. It was not evident however in Categories D and E where the approaches/experiences were broader-based and went beyond the financial data given to take either an historical or future focus to understand the company.

Sharma concludes, in his study on variation in accounting students’ approaches to learning, that the pressures of work force students into surface approaches (Sharma, 1997). This further supported Ramsden’s assertion on perceived excessive workloads (Ramsden, 1992), and is confirmed by this study’s findings of the distribution of student responses being predominantly in the surface or lower order approaches to understanding financial statements.

The pressure from the professional accrediting bodies to include considerable amounts of content into undergraduate accounting courses is clearly related to excessive workloads in order to accommodate the content into a three year
undergraduate degree. A further pressure by university administrators to reduce contact hours could further increase the workload, although there is no assertion that the reduction in staff/student contact hours necessarily has a direct effect on the workload or in fact on the approaches students take (Di Virgilio and Evans, unpublished).

The second aspect of the influence of the accreditation process of the accounting profession on accounting faculties relates to examinations. The skills and attributes favoured by the profession in the Certified Practicing Accountants (CPA) exams are pushed back into the accounting faculties, as students wishing to gain entry to the profession, (in the US) or proceed into CPA status (in Australia), must satisfy the CPA Australia (formerly known as the Australian Society of Certified Practicing Accountants [ASCPA] or Institute of Chartered Accountants in Australia [ICAA] examinations. Nelson argues that:

Because the CPA exam fails to test critical thinking, analysis, synthesis and professional judgement, motivation has existed for accounting educators to increase emphasis upon the memorisation of accounting rules, rather than the theoretical concepts upon which the rules were based (Nelson, 1995 p. 64).

A related factor contributing to the dominance of surface approaches to learning of accounting students, is the difference between undergraduate studies and the professional requirements of the accountant. Friedlan asserts that early university studies in accounting can be mastered successfully using surface approaches and do not reflect the type of work and skills an accounting graduate, performing at a level deemed appropriate by the profession, would need. The perception is that surface approaches/experiences are appropriate for studies in accounting. Students who do well in early years choose to major in accounting still taking with them those surface approaches, and are particularly unprepared for later studies in the discipline which require higher order skills such as critical thinking, analysis, synthesis and professional judgement in order to succeed (Friedlan, 1995).

Roush and Smith argue that changes to accounting education are necessary and are being implemented in response to US reformers of accounting education, which has seen a shift from content knowledge to higher order thinking skills (Roush and Smith, 1997).

Johns, Director of Education and Membership of CPA Australia (formerly Australian Society of CPA’s (ASCPA), in her Occasional Address to the Swinburne University of Technology Graduands also commented on the need to develop other skills in accounting graduates, such as communication, team work and critical thinking (Johns, 1997).

These studies consider students’ perceptions of the subject, the nature and background of students taking up the discipline, discipline differentiation at undergraduate and professional level, and the pressure by professional accounting bodies to increase the content delivery within the three year undergraduate program. These factors all act in concert to drive the student towards adopting surface approaches to the study of accounting as evidenced by the studies presented.
CONCLUSION

The literature indicated that surface approaches to understanding are more dominant in student approaches/experiences than deep approaches. This could be attributed to a number of factors including the nature of the subject, the nature of the students and personality types of students enrolling in the subject, the perception by students of an excessive workload, and actual pressure on workload placed by the accounting professional bodies and academics alike.

This study supported the argument that surface or lower order approaches to/experiences of understanding financial statements are dominant in accounting students. Overall, 24 of the 35 students indicated lower order approaches/experiences however at the individual cohort level there was variation from this, with the Graduate Certificate cohort exhibiting a more even distribution, with a slight dominance at the higher order. The most dominant approach to/experience of understanding financial statements was that of approach/experience C, students identifying key components of an issue and applying the procedure to the relevant data.

The majority of students approached/experienced understanding of financial statements in a one dimensional way, attended to particular elements of the financial statements rather than globally which attended to the complete picture presented by the statements. They also approached/experienced understanding of financial statements in a manner which attended to the past performance of the company without, for most students, attending to any future implications.

There was however variation detected between the student cohorts of the study. Graduate Certificate students did not follow this pattern and were more strongly represented in the higher order experiences with a clear strength in this experience over the other two cohorts. These results could be attributed to the background of the APTEE and Undergraduate student cohorts in the current commercial environment, one with overseas rather than local exposure to accounting information, and the other with no exposure to accounting information. Overseas students might be in need of particular support in understanding western economic and accounting systems before they can grapple with the underlying meaning in financial statements.

The challenge for academics is to successfully guide students into higher order levels of understanding financial statements. Attention needs to be directed at assignment design, including course content selection and instructions to students, as well as to overall workload, delivery and assessment methods in order to foster qualitatively better learning outcomes for students. This will address the concerns of both the professional bodies and employer groups who are currently dissatisfied with some key generic skills of graduates.
Reference List

Accounting Education: Reports on the Environment, Professoriate, and
Curriculum of Accounting. 10

Unwin

Department of Education, Training and Youth Affairs (DETYA). Graduate
Accessed 2000. Available at:

Australian Society of Certified Practising Accountants and Institute of Chartered

Auyeng, P. and Sands, J. (1996) A cross cultural study of the learning style of
accounting students. Accounting and Finance 36, 261-274.

23, 197-206.

Education Research and Development 12, 73-85.

Biggs, J.B. (1999) Teaching for Quality Learning at University, Buckingham, U.K.:
Society for Research into Higher Education & Open University Press.

accounting education: the impact of approaches to learning on academic

implications for learning style preferences. Accounting and Finance 33, 109-
120.

Kogan Page.

demands on first year university students’ approaches to learning, in: Miller,
A.H. and Sachse-Akerland, G., (Eds.) The learner in higher education: a
forgotten species?, pp. 397-407. Sydney: Higher Education Research and
Development Society.

Psychologists Press Inc.


Di Virgilio, P., and Evans, B. (unpublished) Facilitating quality learning outcomes with limited resources by reducing class time from 3 hours to 2 hours per week.


Kings, C. (unpublished b) *Approach to Study Questionnaire*.


**Table I** Outcome Space: Structural and Referential Aspects of Understanding Financial Statements

<table>
<thead>
<tr>
<th>Structural (Strategy)</th>
<th>Referential (Intention)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Focusing on a procedure</td>
<td>Selecting an issue</td>
</tr>
<tr>
<td></td>
<td>Identifying key components of an issue</td>
<td>Seeing the problem in a broader context</td>
</tr>
<tr>
<td>Applying the procedure to all data</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Applying the procedure to relevant data</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Considering additional non-financial data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Making comments for the future</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table II** Approaches to/Experiences of Understanding Financial Statements.

<table>
<thead>
<tr>
<th>Lower/Higher Order</th>
<th>Category</th>
<th>Understanding Financial Statements</th>
</tr>
</thead>
</table>
| Lower Order Approaches/Experiences | A | Procedural, non-discriminating  
Focusing on a procedure; applying the procedure to all data |
| | B | Procedural, partially discriminating  
Selecting an issue; applying the procedure to data relevant to that issue |
| | C | Procedural, selective  
Identifying key components of issue; applying the procedure to relevant data |
| Higher Order Approach | D | Broader-based, historical focus  
Seeing the problem in a broader context, considering additional non-financial data |
|                     | E | Broader-based, future focus  
Seeing the problem in broader context, making comments for the future |
**Figure 1:** Approach to/Experiences of Understanding Financial Statements

![Bar chart showing approaches to understanding financial statements by cohort.]

**Table III:** Approaches to/Experiences of Understanding Financial Statements by cohorts.

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Lower Order</th>
<th>Higher Order</th>
<th>N</th>
<th>Mean Rank</th>
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<tbody>
<tr>
<td></td>
<td>NA A B C</td>
<td>D E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>APTEE</td>
<td>4 2 3 2</td>
<td>11</td>
<td></td>
<td>14.3</td>
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<tr>
<td>Graduate Certificate</td>
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<td></td>
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</tr>
<tr>
<td>Undergraduate</td>
<td>1 4 4 2</td>
<td>13</td>
<td></td>
<td>19.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2 5 7 10 8</td>
<td>35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chi² = 2.197 PNS Kruskall Wallace
Figure 2  Understanding Financial Statements of cohorts: by higher and lower order approaches