Study processes of Malaysian students in Malaysia and in Australia

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Abstract: This paper reports on the first phase of an investigation of the study approaches of Malaysian students undertaking higher education programs on a Malaysian campus and the study approaches of Malaysian students undertaking higher education studies on an Australian campus. The rationale for this study is that investigation of Malaysian students’ approaches to study can productively inform approaches to Australian course design and delivery in both Malaysia and Australia. In the first phase of the study a questionnaire was applied to Malaysian students studying in higher education programs and preparatory programs on the Swinburne University campus, Kuching, Sarawak.

The present investigation employed a modified version of Zeeglers’ Revised Student Process Questionnaire (Zeegers, 2002). The questionnaire investigated the propensity of students to take a deep, a surface or an ‘achieving’ approach to study. As the instrument employed to distinguish student’s approaches to learning is a modified form of previously employed Study Process Questionnaires the results of the investigation do not lend themselves to comparison.

In addition to investigating whether deep, surface and achieving approaches to study could be distinguished, the present study investigated student approaches to study by year of study to test the proposition of Biggs (Biggs et al., 2001) that students learn to adopt minimalist study strategies. The findings of the study do not indicate that study approaches of Malaysian students studying on a Malaysian campus differ significantly by year of study.
Introduction

Topic
This paper is concerned with approaches to learning and study adopted by Malaysian students undertaking higher education programs and preparatory programs on the Sarawak campus of Swinburne University. The paper reports on what is intended to be the first phase of an investigation and comparison of the study approaches of Malaysian students undertaking higher education programs on a Malaysian campus relative to the study approaches of Malaysian students and Australian students undertaking higher education studies on an Australian campus. The full investigation will seek to identify any differences between approaches to learning and study adopted by Malaysian students in Malaysia, Malaysian students studying in Australia and Australian students studying in Australia. This first phase of the investigation is confined to identifying approaches to learning adopted by Malaysian students in Malaysia. It distinguishes approaches by the students’ year of study and by field of study.

Rationale
The full investigation has the potential to test views widely held in Australia on the study approaches of international students, many of whom originate from South East Asia. The conventional Australian wisdom is derived from: Biggs’ and Kember’s investigations of student approaches to learning (Biggs, 1987; Biggs et al., 2001; Kember & Gow, 1990) and Ballard and Clanchy’s investigation of study approaches of international students and the materials subsequently devised by study skills advisers (Ballard & Clanchy, 1991, 1997). Asian students are presumed to bring with them learning experiences that favour ‘rote, reproductive, surface, teacher-centred and dependent approaches to learning’ (Ninnes, Aitchison, & Kalos, 1999). (See also (Ballard & Clanchy, 1997; Devos, 2003; Gribble & Ziguras, 2003). This investigation explores Malaysian students’ approaches to study with a view to informing approaches to Australian course design and delivery in both Malaysia and Australia.

Phases of the study
In the first phase of the study a questionnaire was applied to Malaysian students studying in higher education programs and preparatory programs – including vocational/TAFE and foundation studies – on the Swinburne University campus, Kuching, Sarawak. The approaches to study adopted by these students have the potential to inform approaches to teaching adopted by both local staff and staff visiting from the Melbourne campuses of Swinburne and can inform associated professional development.

The same questionnaire will be applied in later stages of the investigation to Malaysian students studying in higher education programs on the Swinburne University campuses in Melbourne, Australia and to Australian nationals studying in these programs. The subsequent stages of the investigation have the potential to show up distinctions between Malaysian student approaches to study in Malaysia and the approaches Malaysian students adopt when studying in Australia. It also has the potential to indicate whether Malaysian students studying in Australia tend to adopt approaches to study similar to those employed by Australian nationals. There are numerous possible explanations for any distinction detected in Malaysian students’ approaches to study in Malaysia and Australia but it would indicate – as provided for in the design of the Study Process Questionnaires (Zeegers, 2002) – that Malaysian students are not locked into particular approaches. This in turn raises possibilities for instructional design and for approaches to teaching.
Previous studies

The distinctions in student approaches to learning
Marton and Saljo (1976) distinguished surface and deep approaches to student learning in Sweden on the basis of motivations for learning and learning strategies adopted. Biggs using his Student Process Questionnaire (Biggs, 1987) distinguished surface, deep and achieving approaches to both student motivation and study strategies (producing a six cell matrix). This study accommodated student approaches to learning that varied to suit the circumstances and their ends. What appeared to be surface strategies might be adopted to achieve deep learning outcomes. Kember and Gow (1990) and Kember, Wong and Leung (1999) in Hong Kong challenged the distinction between achieving and deep approaches and the reliability of the surface scale. Biggs subsequently devised a shortened version of the Student Process Questionnaire based on two factors (Biggs et al., 2001). Zeegers (2002) in Australia found that Biggs three factor scale for strategies still applies but identified four factors for motivation: extrinsic [surface/achieving], intrinsic [deep], success [achieving] and test anxiety [surface]. The present investigation is based on this model.

 Understandings associated with the distinction
Approaches to learning are not viewed as inherent characteristics of particular students but are adopted by students in response to their learning circumstances. The approach adopted is a manifestation of the intention that the student possesses at the time (Shale & Trigwell). A deep approach to learning is associated with an intention to understand material for oneself. Shale and Trigwell have described a deep approach as involving: vigorous and critical interaction with knowledge content; relating ideas to one's previous knowledge and experience; discovering and using organizing principles to integrate ideas; relating evidence to conclusions; and examining the logic of arguments. They describe a surface approach, which is driven by an intention simply to reproduce parts of the content, as involving: accepting ideas and information passively; concentrating only on what is required for assessment; not reflecting on purpose or strategies; memorising facts and procedures routinely; and failing to distinguish guiding principles or patterns. The key role of intention in this interpretation allows that students with a deep learning intent may from time to time adopt strategies associated with surface approaches simply because internalising some information using superficial learning techniques is seen as a useful or essential base for deeper understanding of the substance of the content. The notion of an achieving approach allows that the intent to succeed in meeting course requirements can dominate and that this will sometimes require deep learning but at other times can be best or most economically achieved with surface approaches to learning. The present study allows that each of these approaches may be identified among participants.

While the tendency towards deep approaches has been found to increase with age (Biggs, 1987), within a particular course of study there is a tendency to move in the opposite direction – from deep approaches to surface approaches (Biggs, 1987; Biggs et al., 2001; Watkins & Hattie, 1985; Zeegers, 2001). The presumption is that students learn what they need to do to achieve the results they want and do no more (Biggs et al., 2001). The demographics of the present study also allow exploration of this issue.
Application of the distinction in educational development

Consequences for teaching of the distinctions between Asian and Australian students has been discussed by Ballard and Clanchy (1991). To maintain deep strategies requires intervention.

Gribble and Ziguras (2003) found that there is little systematic preparation of Australian university staff for teaching on Asian campuses. Most were informed by their own experiences in teaching Asian students and by the experiences of colleagues who had taught in international contexts. One potential value of the present investigation is to test the Australian stereotype of Asian student approaches to learning and so to inform approaches to teaching on international campuses. Gribble and Ziguras found that there is a need for academics to appreciate local cultural, social, economic and legal contexts if they are to improve the effectiveness of their teaching on international campuses. They noted that most academics would prefer to achieve this through mentoring or direct experience rather than through formal programs.

Methodology and the instrument employed

Derivation of the instrument

The present investigation employed a modified version of Zeeglers’ Revised Student Process Questionnaire (Zeegers, 2002). The questionnaire investigated the propensity of students to take a deep, a surface or an achieving approach to study. The instrument employed to distinguish student’s approaches to learning was modified from Zeegers’ revised Study Process Questionnaires to substitute terms thought by the research team to be likely to be unfamiliar to the cohort surveyed with terms more familiar to them; for instance ‘…out of their interest to me’ was substituted for ‘…out of intrinsic interest.’ In some cases substitutions were made for the sake of providing a slant of more interest to the researchers and in these cases – about a quarter of the items – responses may have varied from those that would have been obtained using the original wording. In addition seven items were added to provide additional information of interest to the research team.

Demographics and the version of the instrument employed

The instrument contained a demographic section that addressed: nationality; mother tongue; other spoken or written language(s); language(s) of primary schooling; language(s) of secondary schooling; location of schooling; location(s) of tertiary study; level of study; year of study; and area of study.

Sample

The sample consisted of 219 Malaysian students. Thirty-one percent of respondents were enrolled in a foundation or pre-university year, 16.1% in first year, 32.3% in their 2nd year and 17.1% in their 3rd year of study. Half the students (49.8%) were enrolled in business, with a further 42.3% enrolled in Engineering. Sixty-two percent of respondents were enrolled in an undergraduate higher education course, while 36.2% were undertaking studies at the Vocational/TAFE/Foundation level.

Findings

Deep and surface approaches

The instrument employed to distinguish student’s approaches to learning is not strictly comparable to previously employed Study Process Questionnaires. No comparisons could therefore be made and in the event no general statement on the propensity of the respondents to take, deep, surface or achieving approaches can be made.
Descriptive statistics were generated for each of the three subscales (Surface, Deep and Achieving) (see Table 1). Reliability analysis was conducted using Cronbach alpha for each subscale with all values exceeding the minimum recommended value of .7, indicating adequate internal consistency. The distribution of scores for each subscale approximated a normal curve, with no evidence of skewness or kurtosis. Pearson product moment correlation coefficients were generated between each of the subscales. There was a strong correlation between the scores on the Deep and Achieving subscales ($r=.73$, $p<.001$) and moderately strong correlations between the Surface subscale and the other two subscales ($r=.53$ with Deep and $r=.55$ with Achieving).

**Table 1: Descriptive statistics and reliability statistics for Revised SPQ subscales**

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Number of items</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Range of scores</th>
<th>Cronbach alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface</td>
<td>14</td>
<td>46.45</td>
<td>7.30</td>
<td>22 - 65</td>
<td>.74</td>
</tr>
<tr>
<td>Deep</td>
<td>14</td>
<td>43.42</td>
<td>7.75</td>
<td>25 - 66</td>
<td>.80</td>
</tr>
<tr>
<td>Achieving</td>
<td>14</td>
<td>42.23</td>
<td>8.17</td>
<td>19 - 61</td>
<td>.81</td>
</tr>
</tbody>
</table>

**Findings by year of study**

A one way analysis of variance was conducted to compare subscale scores for students in their foundation year, first, second and third year of study. There were no significant differences between year levels on any of the subscales (see Table 2).

**Table 2: Analysis of variance comparing subscales scores across year level**

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Foundation</th>
<th>1st year</th>
<th>2nd year</th>
<th>3rd year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean (SD)</td>
<td>N</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>Surface</td>
<td>65</td>
<td>45.86 (7.36)</td>
<td>35</td>
<td>44.8 (6.68)</td>
</tr>
<tr>
<td>Deep</td>
<td>66</td>
<td>42.45 (7.06)</td>
<td>35</td>
<td>42.20 (6.92)</td>
</tr>
<tr>
<td>Achieving</td>
<td>66</td>
<td>42.71 (7.71)</td>
<td>35</td>
<td>41.03 (8.09)</td>
</tr>
</tbody>
</table>

**Findings by level/sector of study**

An independent groups t-test was conducted to compare subscale scores for students studying higher education (undergraduate) with those studying TAFE/Vocational/Foundation. The only statistically significant difference was for scores on the Deep subscale, with undergraduate higher education students recording higher scores (see Table 3).
Table 3: Independent groups t-test comparing subscale scores for undergraduate higher education versus TAFE/Vocational/Foundation

<table>
<thead>
<tr>
<th>Subscale</th>
<th>TAFE / Vocational / Foundation</th>
<th>Undergraduate higher education</th>
<th>t (df)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface</td>
<td>74 45.30 (7.37)</td>
<td>128 47.27 (7.36)</td>
<td>-1.83 (200)</td>
<td>.07</td>
</tr>
<tr>
<td>Deep</td>
<td>75 41.89 (7.35)</td>
<td>128 44.36 (8.01)</td>
<td>-2.18 (201)</td>
<td>.03</td>
</tr>
<tr>
<td>Achieving</td>
<td>75 41.75 (7.92)</td>
<td>126 42.29 (8.54)</td>
<td>-.45 (199)</td>
<td>.65</td>
</tr>
</tbody>
</table>

*p < .05

Findings by Field of study
An independent groups t-test was conducted to compare subscale scores for students studying engineering with those studying business. The only statistically significant difference was for scores on the Deep subscale, with engineering students recording slightly higher scores (see Table 4).

Table 4: Independent groups t-test comparing subscale scores for engineering versus business students

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Engineering</th>
<th>N</th>
<th>Mean (SD)</th>
<th>Business</th>
<th>N</th>
<th>Mean (SD)</th>
<th>t (df)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface</td>
<td>88 47.36 (7.60)</td>
<td>103 45.69 (7.18)</td>
<td>-1.56 (189)</td>
<td>.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deep</td>
<td>89 44.65 (7.90)</td>
<td>103 41.91 (7.05)</td>
<td>-2.54 (190)</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Achieving</td>
<td>86 42.69 (8.31)</td>
<td>104 41.82 (8.08)</td>
<td>-.73 (188)</td>
<td>.47</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Discussion and conclusion
Findings of interest arising from this first phase of the study are limited. They relate to significant differences found in responses by level/sector of the program undertaken and by field of study. The want of a significant difference in responses by year of study is also of some interest.

The results and ‘institutionalisation’ of learning
The present study investigated student approaches to study by year of study to test the proposition of Biggs (Biggs et al., 2001) that students learn to adopt minimalist study strategies. The findings of the study do not indicate that study approaches of Malaysian students studying on a Malaysian campus differ significantly by year of study.

Differences in findings by field and by level of study
Findings with regard to the deep approach scores by field of study and level or sector of study are displayed graphically in Figure 1. The graph depicts the increase in deep scores by sector/level of study and that higher deep scores were attained by students studying engineering than those studying in the field of business.
It should be noted however that 77% of the engineering students were undertaking higher education, while only 45% of the business students were higher education students. Given the statistically significant result reported in Table 3 that compares higher education with TAFE/Vocational/Foundation these results should be interpreted cautiously.

References


**Acknowledgements**

This paper draws on Peter Zeegers’ revision of the Biggs’ Study Process Questionnaire (R-SPQ) published in *Higher Education Research and Development, 21*(1). Peter Zeegers gave permission for the use of his revised version of the Study Process Questionnaire. In the event a modified version was employed.