

THE LEARNING APPROACH OF MACAU ACCOUNTING STUDENTS AT THE TERTIARY LEVEL*

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ABSTRACT

The impact of the student's learning approach on academic achievement has been a major research area in accounting education. Previous research has suggested that there are three different learning approaches taken by students in general; surface, achieving and deep. The surface approach is where the students just try to cope with the course requirements or set themselves the task of just memorizing details. The achieving approach is similar to the surface approach but with a major focus on the final result. The deep approach is where the students themselves try to understand the basic ideas and apply this knowledge to new situations. In the deep approach students have a desire to understand and apply the underlying principles. The purpose of this paper is to study the relationship between the students' learning approaches in undergraduate accounting programs and the achievements they have made in their studies.

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The effectiveness of different learning approaches is an important area of education research that has implications for the efficacy of teaching accountancy and the standard of the professional accountants produced and is a major concern of the accountancy profession in Macau. A questionnaire covering learning motives and strategy was adopted from Biggs (1987) to investigate the learning approaches of accounting students. Data collection was carried out using a questionnaire survey of 106 Bachelor of Accounting students in Macau.

In the data analysis, the surveyed students with high GPA scores were characterized as having a deep motive and strategy or having an achieving motive and strategy. The findings offer evidence regarding the effectiveness of the Accounting study package development in the region.

Keywords: Macau Accounting Students, Surface Learning, Achieving Learning, Deep Learning

INTRODUCTION

A greater proportion of students are now progressing to tertiary education in Macau, and this has resulted in an increasing number of students with weaker achievements in high schools being enrolled into bachelor degree programs. Because of this the use of appropriate learning approaches and methods has become increasingly important in aiding student learning. An appropriate Learning approach deals with highly complex facets of student behavior. Students learn from their experiences, while their enthusiasm to learn is affected by numerous factors. Instructors are expected to establish appropriate learning environments that encourage students to learn the underlying meaning of information and knowledge, coping with personal study interests and future career ambitions. The education environment comprises specific goals, good teaching, suitable workload, appropriate assessment and stress on learning independence. These have been connected to the elements of learning approaches comprising attitude and method, as well as the student learning outcomes achieved (Ramsden 1992, 2003). The impact of the study method and attitudes to learning achievements have been a main research area in Accounting education. The current study examines the relationships of learning attitude and motivation to student learning performance.

BACKGROUND

A few years ago there were only a few tertiary education institutions in Macau and the range of programmes and disciplines offered by these institutions were relatively limited. However, as the number of institutions increased, and society demanded different types of expertise, there has been a diversification of the types of programs offered. There are now ten higher education institutions in Macau, four of which are in the public sector.

The Macau government currently works with the public universities to strengthen and improve their education capacity. In tertiary education, the most popular areas are Business and Finance, Tourism and Entertainment, Languages and Translation, and Health Care and Humanities. The accounting major is one of the traditionally important majors in Business and Finance.

For Accounting studies, it is important for students to develop personal abilities such as communication, creative thinking, critical thinking, problem-solving, and teamwork, rather than just routine technical accounting processes (Turner and Baskerville 2011). Deep learning of accounting principles and skills is becoming more essential in the fulfilment of the desired learning outcomes for the current and developing accountancy qualifications in Macau.

Other studies using learning outcomes assessment through assessment performance have produced mixed results (Byrne et al. 2002; English et al. 2003).

The current study assesses the relationship between the learning approach used and learning outcomes using Macau Accounting Program students at the tertiary level.

ACCOUNTING EDUCATION PERSPECTIVES

The focus of accounting research has been divided into various streams in recent years (American Accounting Association 2008). Financial Accounting concerns accounting standards compliance, financial statement presentation, and reporting actions of the company. Management Accounting focuses on corporate resources planning, decision-making, control, and performance evaluation, and highlights unavoidable expenses inherent in organizational

structures, and explains the consequences of business operation information. Auditing purports to judge whether financial statements deliver a true and fair view of the audited entity's financial position, operation results, and cash flow situations.

MACAU ACCOUNTING EDUCATION AT TERTIARY LEVEL

Accounting education at the tertiary level in Macau is to develop accounting graduates to join the business sectors, in accounting, finance and auditing positions. Accounting programmes are designed to integrate theory with exposure opportunities to real practices in order to nurture students with highly marketable skills and a strong academic background. In addition to traditional technical accounting skills and contemporary accounting knowledge, accounting students are trained to expand their knowledge horizon and skill level with analytical reasoning, problem solving, computing technology, presentation skills, and verbal and written communication abilities. Such profession related vocational education prepares graduates for employment for which there is a societal need, and which can be properly done in higher education institutes (Onyilofor, 2014). Schleicher (1999) deduces such practical education cultivates the mental and physical qualities of students thereby enhancing the skills, knowledge and attitudes required for utilizing resources needed for economic development and for future employment. Such profession related vocational education prepares graduates for employment for which there is a societal need, and which can be properly done in higher education institutes (Onyilofor 2014). Schleicher (1999) deduces such practical education cultivates the mental and physical qualities of students thereby enhancing the skills, knowledge and attitudes required for utilizing resources needed for economic development and for future employment.

SIX LEARNING STRATEGIES AND IMPLICATIONS

Biggs (1987) identifies six strategies of learning:

1. Deep - Students who study subjects in depth generally perform well. Deep learning students wish to pursue their own academic interests, based on their own study experience, make their own examples, and follow up their own beliefs to achieve success. Usually, these students are good at working on their own and cope with being left alone. If instructors are too directive, these students may drop out. Or if the 'official' goals are not rejected completely, they may be sought with a surface approach, actually 'putting aside' their deep learning approach. These students work best in integrating elements of the achieving approach. This is relatively easy if the student is sufficiently interested in planning to continue studying higher degree programmes, as a good aggregate of approaches is necessary for success in further studies. Usually it will be that kind of long-term planning that aids the deep learning student who is willing to take suggestions as to how to organize tasks and to work more efficiently. However, if the deep learning practices are not clearly supported and adopted by the institution as evidenced by the specified goals, the student will appear to be performing poorly, no matter how satisfactory learning might be from the individual's perspective (Biggs 1987).
2. Achieving - These students mainly focus on getting good marks. They are ambitious, thoughtful, and careful in planning. These students have a high academic self-concept, and perform well in examinations. The teaching context in the traditional high schools emphasizing prizes, scholarships, competition, principally syllabus-oriented teaching and learning, scheduled study times, organized note-taking, examination question practice, etc. is made for these students (Biggs 1987; Groves 2005). The obverse of this approach is the creation of unwelcome pressure on other students, particularly those low on achievement motivation and inclined to a surface approach. The achieving learning approach might often be labeled as 'opportunistic'; for instance, denying the discussion of an assignment with friends for fear of giving something away. Another type of problem occurs when extreme achievers over-work in their relentless pursuit of high marks, and these cases may then end up being referred to counsellors.
3. Deep-Achieving - The qualities of (1) and (2) come together in the deep-achieving approach, combining an interested search for meaning

and personal relevance with a carefully prepared and syllabus-oriented strategy to obtain high marks in the subjects concerned (Biggs 1991). The result is often associated with good outcomes, and these students often seem problem free. If a deep-achieving student does not do well, there are likely to be quite explicit reasons; a common one is the language problem. For instance, the experience of mathematics learning may encourage meta learning, and the characteristics of a deep-achieving strategy, but if the mathematics learning is not very secure, then the achievement assessed in mathematics may not be good. Therefore, a potentially 'good' approach may end up with poor performance.

4. Surface - Achieving - This approach is adopted by students who want to achieve, yet if they adopt this superficial way to do so, then usually there is a high chance they will be unsuccessful. The instructor might inspire them to adopt the achieving strategy, shape their approach, accomplish their work tasks properly, keep good notes, etc. and discourage a memorization type of learning. These are potentially appropriate students for guidance in study skills (Groves 2005).
5. Surface - Students presenting an exclusive or predominant surface approach will tend to have poor academic achievement. They tend to misjudge their own performance relative to peers and may thus be dissatisfied with their performance. They often do poorly on objective criteria and are likely to perform poorly overall. They may do well under circumstances where routine learning is appropriate, but at the expense of structural complexity. The surface approach is encouraged by pressure resulting from anxiety over examinations, meeting deadlines, fulfilling rigid university requirements, rules, and so on. The instructor's role is not to carry out therapy but to try to alleviate these sources of stress, or possibly to adapt the task to suit the student, especially if the student's failure ratio is simply too high for that particular student. High surface strategy students are usually not very competent meta learners. They frequently have little insight into the 'how' and 'why' of their learning activities. Some may be taught to be more self-aware, but if not, the instructor may have little choice but to teach task specific 'tricks' in a highly structured condition, so that the student can at least follow and show some improvement. Mastery

learning strategy is an example of an approach that appears to be well suited to surface learners. In this approach context and task objectives are highly structured for the student, and the high success rate is explicitly aimed at developing the student's academic self-concept (Bloom 1968; Guskey 2007).

6. Low-Achieving – This relates to low achievement motivation. Together with high surface motive, the students tend to avoid failure rather than to achieve success. They are 'low need-achievers'. These students are not necessarily of low aptitude, but are very defensive when their abilities are visibly assessed, especially in a competitive situation. Their greatest fear is the loss of face subsequent to performance failure and this is particularly true in a Chinese culture. Accordingly, these students are skilled task avoiders, which they do by 'forgetting' important assignments, setting intolerably high or extremely low goals, perhaps even leading to psychosomatic illness (Biggs 1987; Zohar and Dori 2009).

Developing and applying appropriate and useful learning strategies is one of the accounting research domains that has become apparent in the public concern and the need to share innovations for learning (Cook and Hazelwood 2002; Gabbin and Wood 2008). For many years, accounting education in Macau has adopted the United States model that closely matches with American accounting examination syllabuses with a particular focus on the application of technical accounting skills. Macau tertiary institutes provide accounting degree programs which emphasize the technical and professional accounting knowledge delivered to students. Graduates are expected to meet contemporary business and accounting needs. Graduates can take foreign professional accounting examinations, such as the Association of Chartered Certified Accountants (ACCA) of the UK or the Certified Practising Accounts of Australia (CPA Australia) for attaining international professional recognition.

Similar to other tertiary education disciplines, accounting education programs in Macau have been encouraged by the Macau Higher Education Bureau to follow an outcome-based teaching and learning approach in the planning of program curriculums. Learning outcomes at course and program levels need to be well designed for achieving a high quality of teaching and

learning, requiring competitiveness of graduates and responding to the requirements of education stakeholders (employers, professional bodies, government financial departments, institutes, students, etc). English language skills and the application of accounting problem solving are among the most significant abilities required by these stakeholders.

DATA COLLECTION

Survey Questionnaire

A survey questionnaire adopting Biggs (1987) instrument of learning approaches was used to explore the learning motives and strategies of accounting bachelor degree students. Major learning constructs were examined through a questionnaire survey of the student learning approach. Cumulative grade point averages (CGPA) of students were employed to represent student academic achievements.

125 Bachelor of Accounting students of a Macao tertiary institute were contacted and 106 of them successfully completed the questionnaires. They were visited during the class time for the questionnaire survey on a voluntary basis. The response rate was 85%. Data were entered into Microsoft Excel spreadsheets which were later imported into SPSS for data analysis.

The Survey Instrument

The main part of the questionnaire collected information required to measure learning motives and strategies (Biggs 1987). It comprised 52 items concerning the personal qualities required for successful academic achievement. There are three main scales measuring surface, achieving, and deep approaches. For the surface approach, the students focus on what appears to be the most important items and then memorize them. The achieving approach is similar to the surface approach although it is more focused on the assessment results. This maximizes the chances of obtaining good assessment results. The deep approach involves processes of a higher cognitive level than

routine learning; searching for analogies, relating to previous knowledge, and reflecting and thinking about what is learned by the students. Each approach is further divided into two sub-scales of strategy and motive components. Strategy deals with how the students approach the study task. Motive concerns the reasons why the students want to approach the study materials.

For ease of reading by Chinese students, Chinese sub-titles were added to the 52 items. These Chinese sub-titles were checked by language and translation academics. A pilot study was conducted, one month before the survey, to assess the validity of the questionnaire and the appropriateness of the statement set, and where possible to locate potential areas for improvement. For construct validity, a six-point Likert scale was used to avoid the likelihood of central tendency of Chinese respondents (Law et al. 2009). The scoring system started from 1 'disagree very much' to 6 'agree very much'. Chinese respondents tend to have a preference for central tendency; and such a scale prevents the respondents from selecting the middle point of the choice scale.

Survey Results

Table 1 shows the reliability measures, and these are measures of internal consistency, and were obtained by the use of Cronbach alpha for the sub-scales of Biggs' (1987) instrument and were achieved in this study. The measures confirm Biggs' (1987) finding that the surface sub-scales seemed to have the lowest level of internal consistency. The measures of the other five sub-scales are found to have a level of 0.6 or above. These reflect the reliability of the items measured in this study.

Descriptive Statistics

For the 106 usable responses to the survey, 34.5 percent of the students in the sample were male and 65.5 percent female. The students came from Macau (50.4 percent) and the Chinese mainland (49.6 percent) as shown in Table 2.

As is usual, in accounting studies there are more female students than male students.

Table 1. Cronbach alpha results for learning motives and strategies

Source	Surface Motive	Deep Motive	Achieving Motive	Surface Strategy	Deep Strategy	Achieving Strategy
Biggs (1987, p.28)	0.61	0.65	0.72	0.66	0.75	0.77
This study	0.49	0.66	0.64	0.59	0.80	0.79

Table 2. Demographic characteristics of respondents (n = 106)

Demographic data	Type	Frequency	Percentage
Birth Place	Macau	57	50.4
	Chinese Mainland	56	49.6
Gender	Male	39	34.5
	Female	74	65.5

Table 3. Spearman's rho correlation of the students

	CGPA		
	Correlation coefficient	Significance (2-tailed)	N
Surface Motive	.217*	0.021	106
Deep Motive	.259**	0.006	106
Achieving Motive	.342**	0.000	106
Surface Strategy	-0.097	0.308	106
Deep Strategy	.214*	0.023	106
Achieving Strategy	.356**	.000	106

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

In recent years, there has been a growing number of students from the Chinese mainland who are studying accounting at tertiary level for the purpose of achieving certified public accountancy qualifications.

Further statistical data analysis in Table 3 demonstrates the Spearman's rank correlation between student cumulative grade point averages (CGPA) and the learning motivation sub-scales.

These correlation results demonstrate that three scales of achieving motive and achieving strategy as well as deep motive are highly significantly with good academic results. As expected, surface strategy does not demonstrate a significant relationship with good academic results. These results resonate with Bigg's (1991) findings, where the deep learning approach maximizes understanding of students, and hence learning curiosity is satisfied. Students using a deep learning approach regard the learning tasks as interesting and focus on meaning behind them rather than just on the word-for-word aspects. These students can make the best use of the knowledge learnt and assessed, and their learning outcomes are satisfactory. For the achieving approach, monitoring ego-enhancement comes out as clearly achieving high grades. It inspires students to manage learning skills through organizing time, working space and clarifying syllabus coverage well. The students following the surface approach are not as successful in learning outcomes judging by their assessment marks. Their aim seems to be confined to targeting the few essentials that may be repeated through remembering the straight forward facts in their studies. Full application and elaboration of knowledge are not attained.

VALUES TO ACCOUNTING STUDENTS LEARNING

The findings from this study provide evidence of the value to the students of the development of a learning package for the study of accounting. These results deliver further evidence from the Chinese students' data in Macau to illustrate that deep or achieving motives and strategies are generally correlated with more positive academic achievements in accounting studies, as opposed to the students using surface strategies who demonstrate weaker academic performance.

The results of this study provide guidance for the improvement of teaching and learning strategies for Chinese Accounting students. As well as the customary lecture notes and tutorial exercises; case studies, group projects, and presentations are included in the teaching and learning packages for facilitating and enabling students to reach specific learning outcomes, particularly in the areas of analytical, communication, decision-making and interpersonal skills (Duke 2002; Pang et al. 2009). Frameworks and approaches are formulated to realize this goal. Accounting educators should be aware that good course contents and structures are insufficient. The learning environment for accounting students should entail specific features. These comprise a supportive environment with enabling factors (i.e., challenging goals) and a cooperative learning environment (i.e., teamwork) should be delivered. For example, quite a number of accounting programs have been specifically designed to facilitate student preparation for the CPA program (Taylor and Rudnick 2005). This study echoes Radebaugh (1992/1993)'s recommendation regarding clear goal setting in accounting programmes and Hwang *et al.* (2008)'s outcomes for the accounting learning environment.

CONCLUSION AND FUTURE RESEARCH

Students must be active participants in the learning process, not passive recipients of information. They should be required to identify and solve unstructured problems that require the use of multiple information sources. Learning by doing should be emphasized. Working in groups should be encouraged. Creative use of technology is essential. Accounting classes should not focus only on Accounting knowledge. Teaching methods that expand and reinforce basic communication, intellectual, and interpersonal skills should be used. (AECC (1990), 309-310)

For studies in the past, accounting students were more likely to adopt surface learning approaches compared with arts and sciences students, such as language majors (Booth et al. 1999). These research results indicate that both deep and achieving motives and strategies in a learning approach are expressly and completely connected to academic performance. The current study

provides solid support that the composite approach, deep-achieving, contributes to the successful results of Macau accounting students. It has confirmed the findings of previous researches which were done in Australia and Britain (e.g., Lucas 2001; Ramburuth and Mladenovic 2004; Jackling 2005).

The student learning approach and effort dominate the achievement of learning outcome for accounting students. Accounting academics should be aware of and consider the effects of this accounting student approach. If the student learning approach is less suitable, then the effectiveness of the designed learning packages will be decreased. It is essential to ensure that continuing guidance and support is given so that accounting students have a clear and positive learning approach towards the course materials being covered.

This study investigated the factors influencing accounting students' learning and hence academic achievement. The achieving factors may have an additional completing effect on learning. As the questionnaire survey was conducted in one single tertiary institute, this restricts the generalizability of the results. Thus it would be highly useful to confirm the external validity of the study's findings by conducting a large-scale study in other tertiary institutes in the surrounding region.

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