Cross-Cultural Education: Learning Methodology and Behaviour Analysis for Asian Students in IT Field of Australian Universities

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Abstract

Australian tertiary education of information technology (IT) has attracted a large number of international students, particularly from Asia. Cultural factors have affected the quality of learning of international students and the teaching approaches adopted by Australian lecturers. Therefore, cross-cultural teaching and learning situations have become an important issue in Australian universities. This study intends to improve the understanding of Asian students' cultural backgrounds, their previous learning approaches and their perspectives on Australian culture and educational mode, with the objective of helping international students from different cultural backgrounds to overcome the difficulties of cross-cultural study. This study has completed a questionnaire survey of 1026 students, including 292 Information Technology (28.5%) students from five universities in Australia. Among these IT students, there are 100 (34.25%) local students and 192 (65.75%) international students from 39 other countries. The questionnaire contains 55 questions within six question sections and one information section. This paper presents comparison-based data analysis results of this survey on learning methodology and behaviours of Asian students in IT field of Australian universities. It particularly reveals the main difference for students between the universities in their home countries and in Australia, also the difficulties of these students during their study in Australian university through qualitative analysis on open questions of the survey. This paper also reports the research methodology and main findings in cross-culture teaching and learning generated from this study. This work was fully supported by Australian Learning and Teaching Council (CG7-494). .

Keywords: Cross-cultural teaching and learning, IT students, Survey, Australian tertiary education, Asian students, International students.

1 Introduction

International student education is now the third-biggest export earner in Australia and international students, particularly students from Asian countries, make up information technology (IT) departments/schools/ faculties of all Australian universities. According to the website www.studiesinaustralia.com, over 455,000 international students enrolled in courses in Australia in 2007. The largest number of international students in Australia is studying in the high education (university) sector, 177,760. Top five nationalities for 2007 of international students are China (23.5%), India (14%), Korea (7.6%), Thailand (4.4%) and Malaysia (4.4%). IT field (including computer science, information systems and software engineering) is the second majority of international students followed business field. Obviously, these Asian students have different cultural backgrounds from the majority of Australian local students and teachers. Many facts show that cultural factors have obvious influences on many aspects of learning of students and working relationship between staff and students and also among students themselves. In a cross-culture environment, international students may have different expectations in their interaction and different learning understandings from their teachers (Green 2007, Hodne 1997, Ho, 1991). The difference of languages is the most important issue in a cross-culture environment, however, the evidence obtained from survey (Lu et al. 2008) proves that not only language problem can generate confusion, but also different ways to think and perspective to the roles of teacher and student in the education process can generate it (Chen 2003). To explore more effective and suitable teaching and learning approaches in a cross-cultural education environment becomes a significant task for Australian universities.

Although the development of the research on cross-cultural education is growing, most researches in this field only focus on the issues of language,

communication, specific courses and differences in learning styles (Asmar 1999, Watkins 2000, Wei 2007). There is little research to investigate the degree of implications on learning methodology and behaviours brought by culturally specific assumptions and situational variables. Therefore, there is an urgent need to explore current new cross-cultural teaching and learning situations and to develop more suitable approaches to help improve learning practices of Asian students in high IT education of Australia. This project aims to identify the positive and negative influence of the trend of increase of cross-cultural students on teaching and learning approaches in Australian IT educational environment through finding the differences and difficulties of Asian students who are studying in IT field. It aims to improve the understanding of the students' cultural backgrounds, their previous learning approaches and their perspectives on Australian culture and educational mode; to help IT international students who come from different cultural background overcome the difficulties of cross-cultural study. In the meantime, it is expected to bring new ideas to IT lecturers who teach different cultural background students and improve the quality of cross-cultural teaching in their course. It is also expected to develop strategies via recognizing the factors which influence teaching and learning under the cross-cultural environment, and to propose a set of suggestions that can enhance the quality of IT teaching and learning in Australian universities.

We have conducted student questionnaire survey in five Australian universities in 2008. As Business and IT have the majority of Asian international students we therefore selected the two types of departments/schools/faculties in the above five universities to conduct the survey. Questionnaires were handed out by lecturers in classrooms. We totally received 1026 complete student questionnaires including 652 (63.5%) undergraduate students and 374 (36.5%) postgraduate students; and 387 (37.7%) local students and 639 (62.3%) international students in other 56 countries. We have conducted various quantitative and qualit1tative data analysis including frequency analysis, correlation analysis and hypotheses testing, and word mining. Some interesting results have been obtained which are very useful for both teachers and students on teaching and learning in a cross-cultural environment. However, this paper only report some parts of these results obtained.

This paper is organized as follows. After this introduction Section 2 reviews literature on cross-culture teaching and learning. The research methodology including the design of questionnaire, conduction of survey and data analysis approaches is reported in Section 3. Section 4 presents a set of data analysis results: comparison-based distributions and open questions mining. Related findings are shown in Section 5. Section 6 concludes this paper and highlights out suggestions and further study.

2 Literature Review

Cross-cultural education research literature involves various aspects. Here we conduct review mainly from the following aspects: textbook and knowledge authority, learning methods and attitudes, language issues, as well as the relationships between teachers and students in a cross-culture environment, which are related to our student survey results.

In students' attitudes to authority, literature indicates that students from Confucian-heritage cultures are modest and compliant. They are highly dependent on text books and lecture notes. Slay (1999) and Hong (1991) comment that "the respect for the elderly and books is the central idea of Chinese education." It was further stated that this "also means respect for authority, classics and experience". Asian students are more influenced by the childhood education that is you just need to do what a teacher asks you to do and you do not need to have your own idea. This makes that many Asian students are more introverted (Huang and Trauth, 2007). Chiu (2009) argues that the students who come from Confucian-heritage countries have no wish to express critical thinking, which is opposite to western countries' students.

In students' learning methods, attitudes and styles, and perceptions of learning, Phillips, Lo and Yu (2002) point out that there are three kinds of approaches in terms of learning: surface approach, deep approach and achieving approach. They found that Chinese and Asian students often use different approaches in different situations. Demanding examinations may lead them to use surface approach. The traditional Confucian heritage promotes them to use deep approach. Achievement motivation promotes them to use achieving approach. Some other investigators hold the view that students in East and Southeast Asian countries typically rely on rote learning and memorization (Baumgart and Halse, 1999). This kind of learning style only results in low-level cognitive outcomes. In contrast, western countries pay more attention on deep learning over surface ones (Biggs, 1996). It is accepted widely that western learners are independent, favouring deep and cultural learning and encouraged to use constructivist approaches where as Asian learners are more docile, compliant and good at rote memorization attached with surface approaches to learning (Baumgart and Halse, 1999). However, researchers have found that Asian research students have high performance during their study in western universities, which shows they applied the deep approach and achieving approach in their learning.

About the relationships between teachers and students in a cross-culture environment, Littlewood (2001) presents his research results that "Asian students are more ready than European students to accept the traditionally dominant role of the teacher. It may be that this tradition is still felt or imposed more strongly in Asia than in Europe." The classrooms in China and some other Asian countries are different from the ones in western countries. Chinese teachers give lecture with little interaction and students don't like teachers to ask questions in class.

In students' attitudes to working in groups, Hofstede (2001) and Littlewood (2001) found that people who come from Australia, Europe and North America perform strongest individualist orientation, whereas people who come from Latin America and Asia perform strongest collectivist orientation. The individualism people value self-fulfilment and freedom of choice and claim his or her rights over the interests of in-groups to which he or she

belongs (Li and Campbell 2008). On the other hand the collectivism people's identity attitudes and actions are determined by the groups. They value the interests of in-groups to which they belong to over their own individual interests. Fussell and Zhang (2007) believe that comparing with individualist in western countries, eastern countries high valued communal well-being and harmony. Similarly, Pan et al. (1994) indicate that American culture emphasizes on individualism, and equality and freedom. Some scholars argue that western students prefer working alone, Asian students like working together. "It is important evidence that western students are more independent. They are more likely to work according to their own ideas whereas students from China or other Asian countries prefer work together (Hofstede, 2001)."

In language and communication aspects, both students and teachers are aware of the fact and agree that many international students require English language support during their study (Chalmers and Volet 1997, Eisenchlas and Trevaskes 2003). Tiong and Yong (2004) state that Asian international students become silent in group discussion and in the classroom because of Asian students' inadequate language skills and their underdeveloped interpersonal communication skills. Some scholars also examine the methods which can help international students to improve their language skills (Briguglio 2000).

3 Research Methodology in This Study

This section will describe the research objectives, questionnaire design, survey conduction and data analysis approaches used in this study.

3.1 Research objectives

The research is proposed to explore what influence do learning and teaching have on the relationships between teacher and student, student and student under a cross-cultural education environment? What are the effects on the quality of student learning in university and what their expectation on the effects of teacher and other student in study process? How to help cross-cultural students adapt to Australian educational system and to learn about Australian academic culture through knowing about different learning styles from their own culture? It aims to identify the positive and negative influence of the trend of increase of cross-cultural students on teaching and learning approaches; to improve understanding of the students' cultural background, their previous learning approaches and their perspectives on Australian culture and educational mode; to develop strategies via recognize the factors which influence teaching and learning under the cross-cultural environment; and to propose a set of suggestions that can enhance the quality of teaching and learning in Australian universities. This paper only focuses on IT international students learning methodology, behaviour, and difficulty analysis.

3.2 Questionnaire design

Based on the 59 hypotheses, the questionnaire consists of over 50 questions within six sections as follows: (I) Teaching Contents and Textbooks; (II) Teaching and Learning Methods; (III) Education Management Systems; (IV) Language; (V) Culture-based Teaching & Learning Concepts; and (VI) Others (open questions). The questionnaire also contained a set of identification information, including the educational degree of respondents; study field of respondents; how long the respondents have studied in Australia; birth country of respondents; first language of respondents; and which country respondents were mainly educated in. This information helps to identify the respondents' major and which cultural backgrounds the respondents belong to. In this study, 'international student' means that he/she has completed most of their education in countries other than their own. This definition is the most suitable for the Australian immigration situation. From the data obtained in this project, over 90% of international students are Asian students.

Teaching contents and textbooks: we assumed that textbooks have different degrees of importance and are used in different ways in different cultural backgrounds. In some countries, teachers use textbooks a lot in their subjects and students mainly follow textbooks for their study. However, in other countries, teachers either do not use textbooks or use only very limited selected parts of textbooks in their subjects. They prefer to design their personal lecture notes and just give students slides in the classroom and references for reading. Therefore, students from different countries have different attitudes and behaviours towards the use of textbooks. This part of the survey aims to obtain feedback about students' attitudes to teaching content and textbooks. Some examples of questions include: how students evaluate textbooks; the difficulties they have when they read textbooks; what content students read in textbooks; and if they use textbooks written in another language.

Teaching and learning method: It is assumed that international students and local students experience different teaching methods prior to current university study and their learning methods may be also different. This part of the survey is intended to test this assumption. Questions include: whether students feel that the current teaching methods are suitable; what the main differences are between the teaching methods in Australia and their home country; whether they like lecturers to ask questions in classes; what aspects of teaching concern them most; and how satisfied students are with the teaching methods in their current subjects.

International students may have a different *education management system* in their home country which is adapted to the local cultural background. Therefore, the education management system part of the questionnaire aims to acquire feedback from international students on how they adapt to the Australian education management system. Questions include: experience with the academic credit system; attitude to elective subjects; evaluating guidance within the education management system; and evaluating the degree of satisfaction with the subject selection system.

Language problem is the first problem that will be met by international students. It is the main obstacle preventing international students from improving their performance in the overseas study process. Questions on language include: whether the main reason for

communication difficulty is language; do international students have difficulties in understanding lectures due to language; do international students have language-related difficulties in completing homework/assignments; do international students have the confidence to take part in asking questions and in-class discussions; and do international students experience difficulty when they perform oral presentations in class.

Culture-based teaching and learning concept is another important part of the questionnaire. This part of the survey reflects on whether cultural factors have an influence on teaching and learning, and if so, in what aspects and to what degree do cultural factors influence students. Questions include: what are the criteria of good students from the student's point of view; whether students want to express their opinions in classes; do students care whether they have same ideas as others or not; whether students often argue about grades with their lecturers; whether students prefer working with students from the same cultural background in assignments; whether students have participated in any activities that are not related to their course.

3.3 Survey conduction

Under the support of our Australian Learning and Teaching Council grant we applied the designed questionnaire to have conducted a survey in IT and Business academic units at University of Technology Sydney, Curtin Universities, Sydney University, Edith Cowan University and Southern Cross University respectively. We have totally received 1026 completed students' questionnaires in the five universities with 292 in IT field. These IT students have their main educations backgrounds in Australia (100 students) and other 39 countries (192 students). Top five countries are China (48 students, 16.4%), India (27, 9.2%), Indonesia (20, 8.9%), Thailand (11, 3.8%) and Malaysia (8, 2.7%). In these IT international students, there are 76 undergraduate and 116 postgraduate students. See Table 1 for details.

Students	Local	International	Total
undergraduate	86	76	162
postgraduate	14	116	130
Total	100	192	292

Table 1: IT student distribution in the survey

3.4 Data analysis approaches

We used three questions in the questionnaire as measures to clarify and compare the culture issues in student learning. They are (I) country of birth; (II) first language or mother tongue; and (III) where the student completed most of their education before studying at an Australian university. Data analysis results shown in this paper are based on (III). As most of international students surveyed in this project are from Asian countries the term "international students" in this paper means "Asian students". We conducted data distribution/frequency analysis, correlation analysis and qualitative analysis for open questions for data obtained from this survey. This paper only reports distribution/frequency and open question analysis results.

4 Data Analysis

The questionnaire contains 55 teaching and learning questions and some identification questions. Almost questions are multiple-choice questions, agreement questions with degrees, but also have a group of open questions. This section only analyses few typical questions related to learning methods and textbooks (questionnaire Section II) and two main open questions (questionnaire Section VII) since the limitation of pages of the paper.

4.1 Data distributions and frequency analysis

This study has over 50 questions and we have generated distributions for all these questions. This paper here only lists 10 questions' data distributions related to learning methodology and study behaviour.

QII.1 *Which of the following best describes the textbooks you have used in your study?*

This question is about what attitudes the students take toward effect of the textbooks. The attitudes of students are grouped into four possible responses (four categories): (1) more important than lectures, (2) very effective in helping understand lectures, (3) just a reference, and (4) others. As indicated in Figure 1 the proportion of international students who believe that textbooks are very effective in helping understand is obviously higher than of local students. More than half international students believe that textbooks are very effective in helping me understand lectures.

QII.2 *In what proportion of recent subjects studied in Australia do you use textbooks*?

This question compares textbooks use degree in process of study between local students and international students. According to Figure 2, about 15% local students use their textbooks more than 90% in their process of study. On the other hand, international students use their textbooks more than 90% is only 8.33%. However, international students' proportions in groups of 50-70% and 70-90% are obviously higher than local students'. The results shown in Figure 2 indicate that most of international students read textbooks but as English problem or some other reasons they don't read whole textbooks.

QII.3 *If you choose D (<50%) in question QII.2, what is the main reason*?

This question aims to find reasons about why students use textbooks less than 50% in their study process and any difference between local and international students in this matter. As showed in Figure 3, there are 24.62% of students who choose D (<50%) in QII.2 point out the textbooks are useless. Local students are more than international. The high cost of textbooks is another important reason (43%) and the number of international students is much more than local.
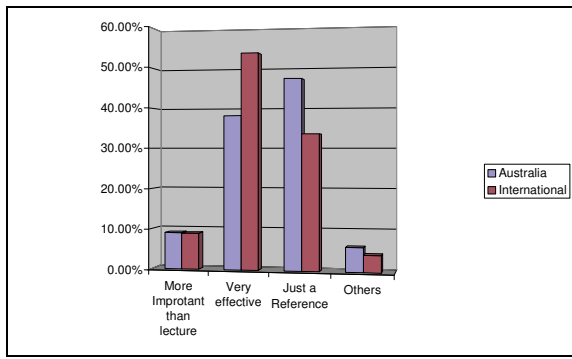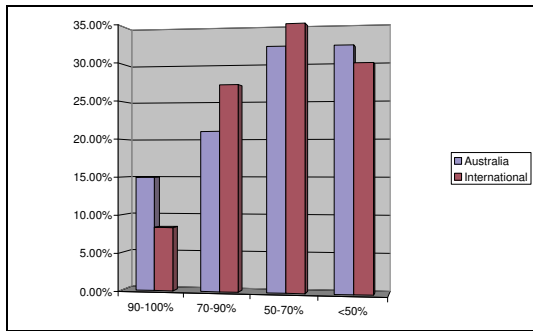
Figure 1: Distribution of Question II.1

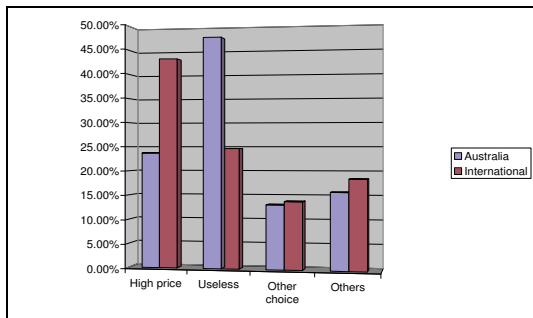**Figure 2: Distribution of Question II.2**

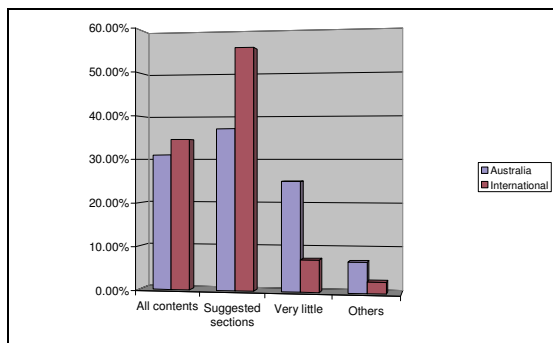**Figure 3: Distribution of Question II.3**

Figure 4: Distribution of Question II.5

QII.5 *On average, what do you read in your textbooks*?

Data in this question shows that more than half international students (55.5%) choose reading suggested sections of textbooks, much more than local students (See Figure 4). The proportion of local students who choose reading very little is obviously higher than international students'.

QII.6 *Describe the characteristics of the textbooks you prefer*

This question includes a set of sub-statements. Students give an agreement degree (1-5; 1 stands for strongly

disagree and 5 stands for strongly agree) for each of these statements.

A: Emphasize theories

Figure 5 shows that most local and international students choose 3, 4 as their have some degree of agreement for the characteristic "emphasize theories" of textbooks. The proportion of local students is dramatically higher than international students' on 3 but lower on 1 and 2.

B: Introduce novel ideas

Figure 6 indicates the proportions of local students' choices on 3 is much higher and on 2 are much lower than international students.

C: Encourage students to think

Figure 7 shows that there are 24% of internationals students who strongly agree with the characteristics of textbooks in terms of encourage students to think, which is higher than local students' proportion (14%).
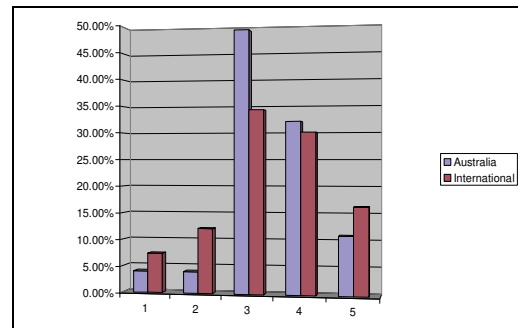

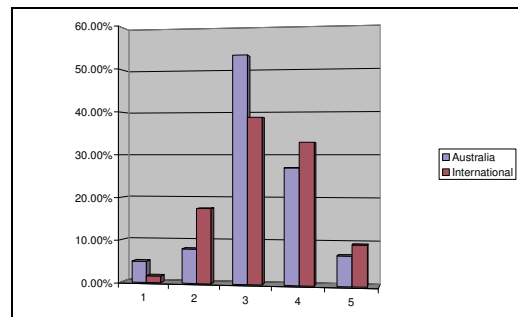**Figure 5: Distribution of Question II.6 (A)**

Figure 6: Distribution of Question II.6 (B)

D: Give many examples to help with exercises and assignments

Form Figure 8, we can see that there are about 60% of internationals students who strongly agree with the statement.
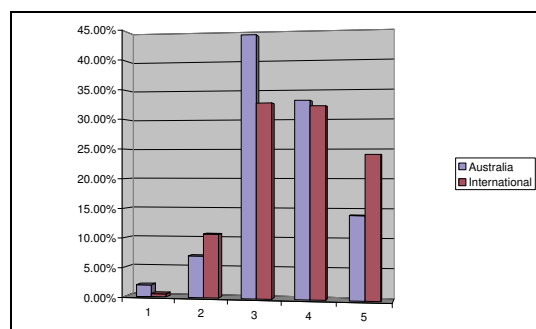
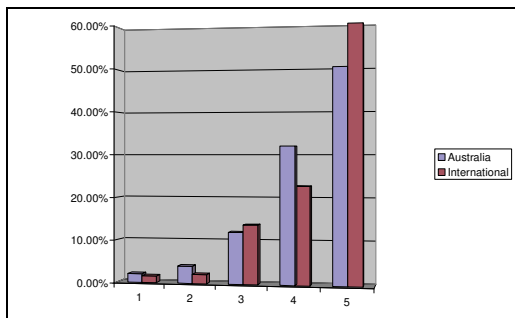**Figure 7: Distribution of Question II.6 (C)**

Figure 8: Distribution of Question II.6 (D)

E: Provide up-to-date knowledge and techniques

Form Figure 9 we can see that there are 48.68% of internationals students who strongly agree with the statement. Figure 10 shows that there are 41% of international students strongly agree with the statement.
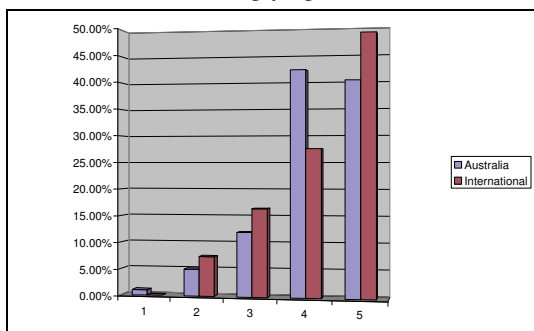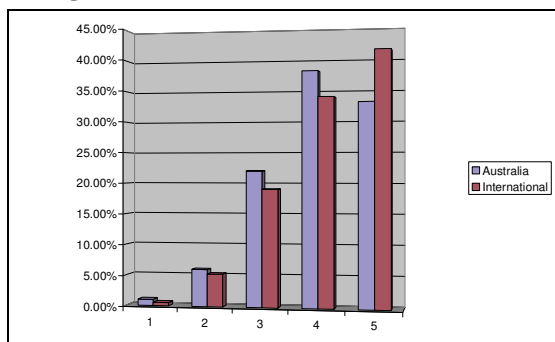

Figure 9: Distribution of Question II.6 (E)

Figure 10: Distribution of Question II.6 (F)

4.2 Open questions analysis

This questionnaire has a set of open questions (in Part VII) regarding to the main difficulties of international students in learning at Australian universities and main differences in teaching and learning between the universities in their home countries and current Australian universities they are studying.

The methodology used to perform these open question analysis include the following steps: (1) reading scheme/sentence in students' answers to get a picture about what the students tried to explain; (2) classifying international students into two groups: undergraduate and postgraduate students; (3) word mining and searching, that is, mining all comments (sentences) to generate some key words such as 'lecturer', 'assignment', 'text book' and define these key words' similarity groups such as 'teacher', 'professor' and 'lectures' are in the same group with the word 'lecturer'; (4) clustering and summarizing contents of each group; (5) generating findings including

main differences on education between universities in their home countries and in Australia and main difficulties of international students to study in Australian universities. Below are the analysis results of students' comments, opinions and stories in the open questions.

4.2.1 Main differences for international students to study in their home country universities and in Australian universities

About 53% undergraduate international students and 57.87% postgraduate international students indicated that the main difference between the universities in their home countries and in Australia is *teaching methods*. For example, one undergraduate student from China states that "teaching methods in China are more emphasis on results while in Australia value the process a lot." One postgraduate student states that "less instruction here, students need to study mainly by themselves, in my country students just did what their teachers told."

Second main difference between Australian university education and their home countries indicated in international students' comments is the environment (13.37% of undergraduate and 11.06% of postgraduate). There are over 40 comments indicated this issue. Students live in college halls in campuses in their home country universities and there are many full-time managers to look after their living and university life, but international students here need to find houses and organize all living matters by themselves.

Textbook issue is the third difference indicated by 21 comments from undergraduate and 19 comments from postgraduates. Over 10 students claimed that they need more time to read textbooks because they need dictionaries to understand the contents. Six students claimed that the textbooks in Australia are very expensive. The two points match with the result obtained in QII.2.

The fourth difference indicated in students' comments is assignment methods. There are 12 comments from undergraduate and 19 comments from post graduate international students to have indicated that the assignment methods in Australia are very different from in their home countries. The weights of assignments here are higher and the assignments here have more challenges.

There are three other main differences indicated by students: communication (11 comments from undergraduate and 16 comments from postgraduate international students), university regulation (over 20 comments), and cross culture issues. For example, one student states that "sometimes because of the language, it leads to misunderstanding with group members and other students." Another student says that "when work with local students in group assignments, there is no confidence to make comments as English problem; to work with students from the same country, although feel confident to contribute group assignments but with less improvement of English." Another two examples are about university regulations. One student argues that "in China, one semester has 17 weeks and has 6-8 subjects for undergraduate students to study, but in Australia only

13-14 teaching weeks." Figure 11 (a)-(b) shows the distributions of international undergraduate students who proposed these seven main differences discussed above in the Curtin University and Sydney University respectively.
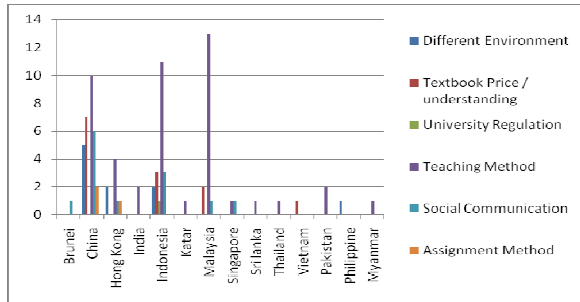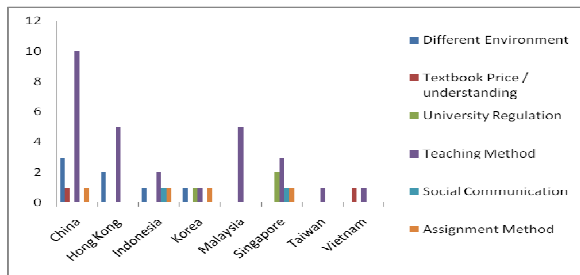

Figure 11 (a): Curtin University
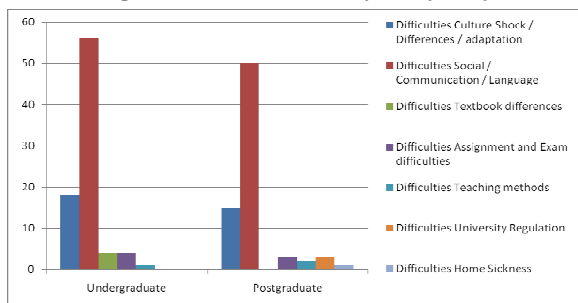

Figure 11 (b): University of Sydney

Figure 12: Comparison between postgraduate and undergraduate international students in difficulties to study in Australian universities

4.2.2 Main difficulties to study in Australian universities

There are 66.67% of undergraduate students' comments and 67.57% of postgraduate students' comments to have indicated that language and communication are the main difficulties experienced when they study in Australian universities. For example, one student from Curtin University states that "it was hard to communicate with local students." Another student from Southern Cross University argues that "there is a bit difficulty to exchange opinions with students who come from other countries due to the English problems." Some students have difficulties to directly contact their lecturers when they have trouble in study. They prefer to ask their classmates who come from the same country. Figure 12 shows the comparison between undergraduate and postgraduate students in their main difficulties in studing in Australian universities. Both indicated communication is the major difficulty.

Culture shock, culture differences and adaptation are the second main difficulties that experienced by international students. One student from Southern Cross University states that he/she confused by some cross-cultural problems, for example the mutual understanding and the way of life between him/her with local students. There are another 10 comments with similar opinions. One student from University of Sydney states that "people from different culture usually have little in common in cultures which may impact on learning behaviours."

There are other difficulties that students felt when they study in Australia including the difficulties in doing assignments, exams, and accepting Australian teaching methods. One student from University of Sydney argues that he/she "could not fully master one subject because 14 weeks for one semester is too short." Other students also indicate that "totally 26 hours lectures for a subject is not enough and should have more lectures." Some other students indicate their difficulties on acceptance of teaching methods in Australia.

5 Findings

We conducted interviews after survey data analysis in this project and combined interview data with survey data analysis results. Interview data analysis will be reported in separate papers. Through survey data analysis, and combining with interview data analysis, a set of interesting findings have been obtained. We explain some compressive findings as follows.

On textbook, learning material, and subject study, we found that Asian background students have different difficulties when reading textbooks, different ways to face the issue that they can't understand their textbooks, and different views in learning from a textbook from local students (QII.2, QII.4). They are more dependent on textbooks. They believe that textbooks are very important to their study but are difficult to read more contents of their textbooks within teaching weeks as English problems (QII.5 and open questions). They therefore strongly agree to have more examples in textbooks and lecture notes.

Some Asian students prefer less students' questions during lectures so lecturers have more time to talk. They don't like some students to ask many questions in lectures and think that students should not be given more opportunities to ask questions in a lecture class (QIII.4 and interviews). From open questions and interviews to students Some Asian students considered it is as a respect and an appreciation to teachers when students listen attentively and quietly in class. All discussions should be done after classes as the class is given to teachers and any discussion work will occupy teachers' talk which result in less knowledge transmissions to students and students will learn less. In contrast, Australian university teachers encourage students to express themselves well in classes and use some class-time to organize discussions. Many teachers here encourage their students to express their different opinions from teachers on the table, whereas, in some other cultures making critiques on teachers in the class is rude behaviour. Asian students face the challenge in their current cross-cultural teaching and learning environment. On one side, they are likely to follow the teachers' opinions and the authority is high values. They

believe their teachers are authority in the subject and the authority is generally not questioned by students. As Littlewood (2001) indicated that they think the knowledge is a thing that should be transmitted from teachers to students but not a new thing that should be discovered by their own. On another hand, they have poor English communication skills and therefore lacking of confidence to challenge their teachers. Many Asian students are not suited to this learning approach; as a consequence they seldom question what the teachers tell them.

Moreover, many Asian students don't like to insist on their opinions when they conflict with teachers'. They sometimes have difficulties to directly contact their lecturers when they have questions in study (open questions, Question VI.6 and interviews). These issues in somehow resulted from some students' culture background. In some Asian countries, the questions asked by lecturers in classes are often very hard. Students feel to take an oral exam in a public situation. Sometimes, teachers ask questions aiming to check students' understanding of the contents they just taught rather than encouraging critical and creative thinking.

The students from different cultural backgrounds have different attitudes to working in groups. Our data shows that Asian students have the similar level of participation in group work and group assignments, but less providing different ideas because they values group harmony, respect for authority and less arguments (Open questions, Question VI.4, question VI.5, and interviews). However, they often have team works after classes to help each other and shire their understanding of subjects in their daily study.

The survey results also show that for Asian students, undergraduates have more rely on rote learning and memorization than postgraduates. In contrast, postgraduate students more participate on variable team work and have better academic achievement. Indian students, as one of the biggest international student community, have better English skills than other countries. They prefer indirect communication style. In contract, Chinese students prefer reading and writing capabilities-based communication style such as e-mail as their reading and writing capabilities are in general better then listening and speaking. In classrooms, when they cannot fully understand what the teacher talked about in class, they will read the text books and lecture notes after class as compensation (interview data analysis). As Wan (2001) indicated that the gap between such abilities among Chinese students resulted from English teaching method in China. Chinese teachers teach English mostly through the traditional grammar-translation method. The result is that students know the grammar and vocabulary of English, but they are still "deaf and mute" in English in authentic situations. Some Asian students explain that because of inadequate oral English and underdeveloped interpersonal communication skills, they seldom express themselves in classes and group discussion even they know the answer and have personal opinions. As an example, in group assignments, Asian students are almost in charge of some reading-based tasks such as data collection, literature review rather than presentations.

There are very few Asian students to be a group leader (even they were leaders in their home countries). However, some evidences suggest that the problems of cross-cultural teaching and learning include not only language barrier, but also the different assumptions about knowledge, logicality, teaching and learning.

6   Conclusions and further study

Teaching and learning in a cross-culture environment remain a great challenge in our current educational systems. This study aims at understanding the learning methods, specific requirements and prior learning experiences for our international students, analysing their difficulties and frustrations in learning in Australian universities, finding out main factors that may influence their learning outcome and exploring new teaching and learning methods in the cross-cultural IT educational environment. This paper reports current situation of cross-cultural teaching and learning of Asian students in IT field of Australian universities through a survey in five universities. The findings of the study will help the universities in making more aimed cross-culture teaching and learning strategies, which will further help the lecturers more successfully teach our international students, and at the same time help our international students more effectively overcome their difficulties in learning caused by cultural barriers.

According to data collected, this study outlines the commonness of Asian international students in their learning attitude, learning methods, specific requirements for lectures and teaching materials, analyses the main differences between their culture and Western culture carried out in IT high education systems. Our results (this paper only reports a small part of the results we obtained) indicate that study abroad is a tough thing because internationals students have to face a lot of difficulties in learning a new language, adapting to a new environment, living alone and at the same time they need to get academic improvement. We found some general phenomenon happed on international students. We hope this research will be able to provide assistance to international students in the future. As further work, we will report correlation analysis for the survey data and hypotheses testing results. We will also report interview data analysis results obtained in this study in details. Particularly, we will discuss a guideline to teaching staff and a guideline for international students.

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