The Perceived Effects of Cross-Cultural Interaction on Flight Crew Training Between Anglo-Australian Flight Instructors and Asian Students

Daniel Goh

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THE PERCEIVED EFFECTS OF CROSS-CULTURAL INTERACTION ON FLIGHT CREW TRAINING BETWEEN ANGLO-AUSTRALIAN FLIGHT INSTRUCTORS AND ASIAN STUDENTS

BY

Daniel Goh Y.F.

A Thesis Submitted in Partial Fulfilment of the Requirements for the Award of

Bachelor of Science (Aviation) with Honours

At the Faculty of Communication, Health and Science,

Edith Cowan University

Date of Submission: 30 November 1999
ABSTRACT

The study investigated the perceived effects of cross-cultural interaction on ab-initio flight crew training between Anglo Australian flight instructors and Asian students. Students and instructors perceptions were sought as to whether they believed that cross-cultural interaction would impede learning. The sample included forty-eight students and nine instructors from two flying schools. Thirty-eight students were required to complete a 15 item survey and ten students and nine instructors participated in a semi-structured interview. The research identified four specific areas – language, studying and teaching methods, attitudes towards asking questions, and command decision making. Cross-cultural interaction was found to be an integral factor in determining the rate and quality of learning. The results showed that language barriers and different cultural expectations (i.e. studying and teaching methods, attitudes towards asking questions, and reticence to make command decisions) led to a reduction in the quality of training and an increase in learning time.
DECLARATION

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

Signed
ACKNOWLEDGMENTS

I would like to thank my supervisors, Mr Malcolm Yeo and Ms Elizabeth Derricks, for their valuable support, assistance and encouragement throughout the study, Mr Steven Phillips for his assistance in guiding me through the initial stages of my thesis, and Dr Helen Wildy and Dr Pender Pedler for their statistical expertise.

I would also like to thank the many staff at Edith Cowan University, Mount Lawley Campus who offered their expertise at various stages of the study, and the managers of the flying schools for their cooperation.

Finally, I would like to thank my family, Mum, Dad, Elizabeth and Janet for their unlimited support and patience when I needed it most.
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Chapter 1

Introduction

Background to the Study

Current research in aviation regarding the effects of cross-cultural interaction has indicated that there may be differences in the way pilots conduct their work as a function of National Culture and that these differences may affect their teamwork in the cockpit. Comparisons regarding the responses of pilots from various cultures operating in different airlines have been made to examine possible cross-cultural conflicts. In Merrit’s (1997) cross-cultural study across 18 airlines, the experiment conducted by Hofstede on IBM employees from different countries in the 1960s was replicated and significant differences were observed between the responses of pilots with an “Anglo” background and pilots with a “non-Anglo” background. Problem areas identified in the field of aviation regarding cross-cultural interaction include language (Merritt & Ratwatte, 1997), reticence of Asian pilots to question authority (Merritt (1997), and command decision making (Merrit & Ratwatte, 1997).

There was no study found to investigate the effects of cross-cultural interaction on ab-initio flight crew training. Given Merrit’s findings, it was hypothesised that the quality of and the time taken for learning for students undertaking ab-initio flight crew training in a cultural environment different from their own, could be influenced by language, different studying and learning methods, confidence to make command decisions, and their attitudes towards asking questions.
Purpose of the study

The purpose of the study was to determine if Anglo Australian flight instructors and Asian students perceived that cross-cultural interaction influenced flight crew training at the *ab-initio* level. It was expected that this would achieve an insight into the possible influences on how different cultural backgrounds may have hindered or enhanced the students' learning experience; if students and instructors perceived any influences stemming from cross-cultural interaction and how they had coped with these influences.

Definition of Terms

*Ab-initio flight crew training*

The elementary phases of flying training from Effects of Controls up to Commercial Pilot Licence standard. Approximately between 0 to 200 hours of flying training.

*Anglo pilots*

For the purposes of this study, unless otherwise stated, an Anglo pilot is a person who has an English cultural background.

*Asian Students*

For the purposes of this study, and Asian student is an international student from an East Asian country studying in Australian universities.

*Briefing*

A classroom lesson conducted before practical flying training takes place.
Cognitive Judgement

Judgement that requires "a considerable amount of thought" (Jensen, 1995, p. 28)

Cross-cultural interaction

Interaction between individuals from different cultural backgrounds.

Culture

"The values, beliefs, rituals, symbols and behaviours that we share with others that help define us [as] a group, especially in relation to other groups" (Helmreich & Merritt, 1996, p. 20)

De-briefing

A discussion between student and instructor conducted after a training flight has ended.

Flying School

Fixed base operator conducting flying training for overseas airline cadets.

Instructors

For the purposes of this study, unless otherwise specified, an instructor is an Anglo Australian conducting ab-initio flight crew training for Asian Students.

Likert Scale

A type of survey item where the respondent is to "indicate their agreement or disagreement [to a particular statement] along a five-point (or sometimes longer) scale ranging from 'strongly agree' to 'strongly disagree' (Burns, 1994, p. 337).
National Culture

The shared values and attitudes of a national group that direct behaviour (Helmreich & Wilhelm, 1997, p. 1).

NDB approach

An instrument approach to an aerodrome conducted with sole reference to the Non-Directional Beacon.

Power Distance

"The extent to which the less powerful members of institutions and organizations [sic] within a country expect and accept that power is distributed unequally" (Eylon & Au, 1999, p. 376).

Students

For the purposes of this study, unless otherwise specified, a student is defined as a person from East Asia conducting flight crew training in Australia.

The Significance of the Study

This study is aimed to provide information about the perceptions of students and flight instructors regarding the effects of cross-cultural interaction on ab-initio flight crew training. The value of the data would be its effects on the possible further development of ab-initio flight crew training for students undertaking such training in a culture different from their own.
Chapter 2

Review of Literature

Introduction

Many studies have been conducted on the psychology of cross-cultural interaction, particularly on the experiences of tertiary students, businessmen, immigrants and refugees (Furnham & Bochner, 1986, Harms, 1973, Brislin, 1987). The researcher has found no study conducted on overseas students conducting flight crew training in a culture different from their own. The closest field of study that the researcher found was on overseas students studying in universities.

The literature review was conducted in four main areas - language, studying and teaching methods, attitudes towards asking questions and command decision making. The review on “language” is centred on how language difficulties can affect the quality of learning. “Studying and teaching methods” briefly outlines the inherent difference in learning skills and teaching methods between the Asian and Australian cultures. The section on “attitudes towards asking questions” examines why students from Asian cultures are hesitant to ask questions. The investigation on “command decision making” examines the ability of airline pilots from Asian cultures to make command decisions and reviews its importance as an integral part of pilot training.
Language

One of the most important determinants of cross-cultural interaction is the issue of language. In Volet’s (1997) study of Asian students in higher education, she identified the lack of proficiency in the language of instruction as an important source of learning difficulty in university for Asian students. Volet stressed that the effect of language proficiency could seriously impact on the quality of students’ learning. She explained that a lack of fluency in the language of instruction restricted and slowed a student’s capacity to process information. Students who were not fluent in the language of instruction were found to be lacking in their capacity to read complex materials, write argumentative essays and think analytically (p.33). This can significantly increase learning time.

In a study conducted by the Australian Department of Youth Affairs (Bradley & Bradley, 1984) on the problems of Asian students studying in Australia, it was discovered that many Asian students had difficulty in speaking, understanding, reading and writing English. The study discovered that the characteristics of Australian English seemed to cause initial problems to almost every student. It was noted that even the most fluent of Asian students still made errors, which interfered with their comprehension. Bradley and Bradley (1984, p. 209) also revealed that due to the limited vocabulary of Asian students, there was often cause for misunderstanding and this resulted in teaching and learning difficulty. The study concluded that the lack a full range of vocabulary was virtually inevitable for Asian students unless they were totally immersed in Australian society at an early age.
The reason why many Asian students have problems reading and writing English is due to the morphology of English. Perfetti and Zhang (1995, p. 186) explains that "The reader of an alphabetic system can do better at recovering the phonological form, less well at recovering the semantic category of the word". This suggests that one must have a wide vocabulary of English in order to function in a society where that language is dominant. It is difficult to infer meaning for English words and users not proficient with the English vocabulary will have difficulty in comprehension.

Language is an important issue in the cockpit. Kanki (1995) explained that due to the interdependent nature of the cockpit crew, language was an important requirement to issue and acknowledge commands, conduct briefings, perform standard callouts, state intentions, ask questions, and convey information. According to Sexton and Helmreich (1999, p. 1), pilot error was more likely to be due to failures in team communication than deficiencies in technical proficiency. Human factor issues related to interpersonal communication were also implicated in approximately 70% to 80% of all accidents over the past 20 years. "In order for cockpit crewmembers to share a "mental model," or common understanding of the nature of events relevant to the safety and efficiency of the flight, communication is critical." (Sexton & Helmreich, 1999, p. 1). Given the importance of language in communication, the issue is compounded when pilots from different cultural backgrounds work together in the cockpit.

A study conducted by Merrit and Ratwatte (1997, p. 2) on safety in monocultural cockpits versus multicultural cockpits discovered that in emergency situations, pilots from a non-English speaking background had immense difficulty in communicating with pilots from an English speaking background due to lack of fluency in the language.
Many non-English speaking pilots had problems understanding their English-speaking counterparts due to variance in accent and rate of speech, which is a product of culture. Harms (1973, p. 30) explains that communication between two people of similar cultures is usually faster and more reliable when compared with two people of dissimilar cultures. An incident report by the Bureau of Air Safety Investigation (Australia) details an incident between a TB-10 and a Dash 8. The incident occurred because a deficiency relating to the standard of English language used by a foreign student during communications with air traffic services created a situation where safety was compromised (BASI Occurrence Brief 199802472). The TB-10 was assigned an altitude of 2,500ft and the Dash 8 was assigned an altitude of 3,500ft to maintain legal separation. However, the pilot of the TB-10, who was from a non-English speaking background, and had an accent that was difficult to understand, believed that ATC (Air Traffic Control) had said 3,500ft. He read back 3,500ft but the controller understood it to be 2,500ft. This led the pilot of the TB-10 to maintain an altitude of 3,500ft and resulted in a near collision with the Dash 8. Pilots can potentially put themselves into a situation where safety can be compromised if they cannot communicate efficiently and unambiguously with their co-pilots, ATC and other pilots.

Given the significance of language in aviation, and how the lack of proficiency in the language of instruction can cause learning difficulty, part of this study investigated whether students and their flight instructors perceive that language and communication difficulties occur while flying training is being conducted.
Studying and Teaching Methods:

One of the many difficulties experienced by Asian students studying in Australia is their overseas educational background. Bradley and Bradley (1984, p. 268) explain that the study methods and study skills between two cultures will be different because of a fundamental difference in the philosophy of education. One of the differences discovered was the attitude to the material studied. Asian students tend to use intensive study and memorisation of texts and lecture notes as their primary means of learning (Bradley & Bradley, 1984, p. 270). Bochner and Wicks (1972, p. 72) explained that Asian students held their teachers in high regard and demonstrated an attitude that their teachers were "not to be questioned". Therefore, they were more inclined to accept an academic authority and were less independent in their thinking. Bradley and Bradley (1984) explained that due to the overall cultural desire for avoidance of conflict, Asian students tended to have an attitude that there was only one right answer, and that it is to be memorised and recalled in tests and exams.

The Australian method of teaching stresses critical thinking and creativity. Critical thinking is defined as "the ability to make objective and rational decisions on a range of issues" (Biggs & Telfer, 1987, p. 23). Creativity is defined as the "self-expression and participation in school based cultural activities" (Biggs & Telfer, 1987, p. 23). Australian schools also place emphasis on "inquiry skills" (Biggs & Telfer, 1987, p. 24), which help to promote critical thinking and creativity. The ability to think critically gives the student the skill to apply what has been learned. Telfer and Biggs (1988) explain that the advantage of meaningful learning was that it was much more economical, more stable, and usually more enjoyable than rote learning.
Students will not be able to relate theories with practical application if they are unable to recall them in the first place. Many educators see this as the first stage of cognitive development. "It is the second stage of cognitive development that is proving more difficult - Translation of theoretical knowledge back into practice. This appears to be the major problem identified by teachers in China" (Connell, Christie, Jones & Lawson, 1973, p. 61).

There is little doubt that the ability to think critically is an essential asset to pilots. Jensen (1995, p. 28) describes critical thinking as an integral part of Cognitive Judgement as it allows pilots to apply and relate information previously learned to a variety of new situations. Without this ability pilots will not be able to transfer principles of flight to practical flying. Telfer and Biggs (1988, p. 25) explains that if a trainee is unable to explain a principle or regulation in different words from those used in the rule book, the probability is that it has not been understood. Part of this study investigates whether there are any perceived differences in teaching and learning methods and how they affect the learning of Asian students undertaking ab-initio flight crew training in Australia.

**Attitudes Towards Asking Questions**

Closely associated with the Asian students' study method is their attitude towards asking questions. Described by Bochner and Wicks (1972, p. 27), due to their cultural upbringing, Asian students are generally accustomed to treating their parents and elders of the family with respect. Consequently, most Asian students also treat their lecturers and teachers in the same way. Bradley and Bradley (1984) explained that in Southeast Asia, teachers were seen as a "leading figure", they were spoken to politely and were
never contradicted or even questioned in such a way as to make it seem that the student disagreed. Such behaviour is also due to the Asian cultural desire for the avoidance of conflict (p. 225). This results in most Asian students adopting a “conservative/reproductive” approach as compared to an “analytical/questioning” approach, which is the expected response in Australian education (Bradley & Bradley, 1984, p. 270).

A further reason why Asian students may be hesitant to ask questions is due to the preservation of “face” and language difficulty. According to Mente (cited in Volet & Tan-Quigley, 1999, p. 104), “face” is “a sense of social status, what a person thinks of himself or herself in relation to other people”, and is strongly linked to the definition of social status”. Bradley and Bradley (1984) explained that due to language hindrances, Asian students would have difficulty in expressing their thoughts quickly and coherently in a foreign language. This is further aggravated by the fear that the student might be wrong, or might lose an argument and therefore lose “face” in front of their classmates and teachers (p. 272).

Keats (cited in Bochner & Wicks, 1972, p. 72) has found that due to their cultural upbringing, Australian students would critically examine a piece of information given to them. If unsure, they will not be shy to ask questions of their lecturers in order to clarify their understanding. Bochner and Wicks (1972, p. 112) explains that the Asian students’ reluctance to ask a question can lead to an Australian tutor or lecturer thinking that there is understanding when there is not. The relationship between the Asian student and their lecturer “may differ so much that learning is inhibited in the Australian setting because
the required behaviour (asking questions) has been previously culturally unacceptable’ (Bochner & Wicks, 1972, p. 107).

The reasons pertaining to the reluctance of Asian students towards asking questions is not unique to the field of education. Research in the field of aviation psychology by Merritt (1997) has discovered that pilots from Asian cultures had a higher power distance index compared with pilots from an Anglo culture and this was responsible for them being more hesitant towards questioning authority. Hofstede (cited in Eylon & Au, 1999, p. 376), defines power distance as ‘the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally’. Eylon and Au (1999, p. 377) revealed that those individuals from high power distance cultures are accustomed to working in environments where they can expect to be told what to do. Consequently, when compared with Anglo pilots, Asian pilots may more readily accept the decision made by an authority without question.

Part of this study investigates the perceptions of Asian flight cadets towards asking their instructors questions. Responses from instructors will be used to determine whether they perceive that this attitude (reluctance to ask questions) exists in their students, and if it is a hindrance to learning.
Command Decision Making

Closely associated with the attitude of Asian pilots towards asking questions is the topic of decision making. Decision making or pilot judgement is defined as "the process of recognizing and analyzing all available information about oneself, the aircraft and the flying environment, followed by a rational evaluation of alternatives to implement a timely decision which maximizes safety" (Telfer & Biggs, 1988, p. 138). Research has shown that due to their cultural desire for conflict avoidance and high power distance, Asian pilots are reluctant to make command decisions in the presence of higher ranked pilots (Merritt, 1997; Hofstede, 1991; Merritt & Ratwatte, 1997).

Associated with conflict avoidance is the issue of uncertainty avoidance. Uncertainty avoidance is defined as the "extent to which the members of a culture feel threatened by uncertain or unknown situations" (Hofstede, 1991, p. 263). Merrit (1997, p. 3) discovered that Asian pilots endorsed rules and procedures as a way of resolving uncertainty. Merritt and Ratwatte (1997, p. 1) have revealed that junior pilots from a high power distance and high uncertainty avoidance culture, will tend to avoid or be reluctant to make a decision without consulting a senior pilot.

According to the testing requirements set out by the Civil Aviation Safety Authority (Australia), students attempting both the Private Pilot Licence and Commercial Pilot Licence flight tests are required to demonstrate their ability to make operational decisions promptly and correctly (CASA test form numbers 077 and 090). It can be inferred that Asian cadets may have difficulties in demonstrating their ability to make command decisions to their instructor.
Summary

The literature reveals that Asian students pursuing education in Australia are likely to have language comprehension problems. Due to their educational background, these Asian students could have difficulty in applying information previously learned to new situations. As a result of their cultural desire for the avoidance of conflict, Asian students could be reluctant to ask their instructor questions and would avoid demonstrating to their instructors the making of command decisions.
Chapter Three
Research Questions

The focus of the study is on the perceptions of Asian students and their instructors. The study questions will address the relationship between language, different studying and teaching methods, attitudes towards asking questions, command decision making and how they can influence the Asian student’s ability to undertake flying training.

General Research Question

The general research question, which the study investigates, is:

What are the perceived effects of cross-cultural interaction on flight crew training between Anglo Australian flight instructors and Asian students?

Four specific study questions were developed to explore the general research question and are presented in the following section.

Specific Study Questions

1. Language
   a) Are students confident with their ability to express themselves in English?
   b) Do students perceive that they have difficulty in comprehending their instructors’ speech?
   c) Are there implications relating to student learning.
2. Studying and teaching methods
   a) Do instructors perceive that their students tend to memorise information instead of understanding it?

3. Attitudes towards asking questions
   a) What are the students' perceived attitudes towards asking questions?
   b) Do their instructors share this perception?

4. Command decision making
   a) Do students perceive that they are confident to make decisions?
   b) Do their instructors share this perception?
The Design of the Study

The study used a mixed methods form of design consisting of both quantitative and qualitative analyses. The quantitative analysis was conducted in the form of a survey for the students and the qualitative analysis utilised a tape-recorded interview for both the students and instructors. The researcher decided to use both quantitative and qualitative research methods because a combination of the two was a good method of crosschecking and supporting the answers from each method.

Sample

The sample consisted of students and flight instructors from two flying schools. The students' age groups ranged from twenty-one to twenty-eight years and they had between one and two hundred hours of training experience. Most of them have also obtained some form of tertiary education (at university or similar institutions). The flight instructors from both flying schools were Australian males. They were all quite similar in experience with the majority of them holding permanent positions and having at least a Grade Two Instructor Rating.

Twenty survey forms were submitted to each flying school. Nineteen survey forms were filled out and returned. Five students from each flying school who did not participate in the survey took part in the tape-recorded interview. Five instructors from Flying School One and four instructors from Flying School Two also took part in the tape-recorded interview. This response rate was reasonably close to the proposed target population of
twenty surveys, five student tape-recorded interviews and five instructor tape-recorded interviews from each flying school.

**Instrument**

The instrument utilised for the survey was a 15 item survey of the Likert Scale type (Appendix B). Interviews were carried out following a list of semi-structured questions. The Instructor's Interview consisted of eleven semi-structured questions and the Student's Interview consisted of ten (Appendix B).

**Data Collection**

The data collection was carried out over a period of six weeks. Before the flying schools were contacted, instructors who had experience with teaching Asian students participated in a pilot study. The instructors took part in a tape-recorded interview and gave suggestions for improvement on the design of the instruments. The data collected from the pilot study was used to improve the research questions and refine the study. A pilot study was not conducted on the students.

Permission was then obtained from the managers of each flying school to conduct the study. Each allocated a student representative to liaise with the researcher to arrange the interviews. Due to restrictions imposed by the flying schools, the researcher was encouraged to leave the survey forms with the student representatives to distribute to their counterparts for completion. Verbal instructions regarding the process for completing the questionnaires was given to the student representatives to convey to the participants. Both flying schools allocated a group of students in the same course group.
to participate in the interviews. The student representatives chose the participants for the instructors’ interview.

Both the quantitative and qualitative analysis were anonymous. All students and instructors were presented with a letter of introduction including a consent form (Appendix A). The interviews were constructed to last for no longer than thirty minutes. They were then transcribed and the tapes destroyed by means of incineration to secure the identity of those interviewed. The supervisor of the unit will keep both the original transcripts of the interview and the quantitative questionnaires for a period of five years.

Data Analysis

The information gathered through the quantitative analysis was analysed statistically using the software program Statistical Package for Social Sciences (SPSS). The statistical tests that were carried out in the analysis of the data were frequencies and bivariate correlations using the Kendalls tau-b correlation coefficient. The results were used to support the findings from the interviews.

Limitations of the Experimental Design

The students from the two flying schools that participated in the study were both of Asian descent, and therefore, have similar cultural backgrounds. They belonged to one age group and had similar training experience and tertiary education. These similarities indicate that the findings gained are probably specific to them and may not be generalised.
The instructors from both flying schools were all Australian males. They had similar job positions and experience. These similarities indicate that their responses are probably specific to them and may not be generalised.
Chapter Five

Results

Introduction

This chapter is organised into four sections – language, studying and teaching methods, attitudes towards asking questions, and command decision making. Each section covers a particular topic of discussion and is organised in the following order:

1. A vignette from either a student or an instructor.
2. Findings and discussion based from the survey and interview

The vignette was included to set the scene for the findings and discussion and was written from a first person point of view. It was designed to provide the reader with a particular scenario and is aimed at helping the reader focus on the topic to be discussed. The vignette is fictional but it is loosely based around the answers given by respondents from the interviews.

Limitations of the Interpretations Placed upon the Findings

Strength of Findings

All the students at the flying school were reasonably homogeneous in terms of age, cultural background, training experience, and level education attained. The flight instructors were also relatively homogeneous in terms of cultural background and instructing experience. Therefore, the findings from this study may be generalised to all students and instructors within these two flying schools. However, the strength of the findings may be reduced when generalised to other flying schools where their students and instructors may not have the same characteristics.
Differing Asian cultures

Due to the requirement of the university to protect the anonymity of the flying schools, students and instructors, it was inappropriate to identify the flying schools other than generalise that they were both training East Asian students. It is important to point out that while the focus of the thesis was on Asian students and their interactions with flight instructors, only two Asian sub-cultures were sampled. Findings from these two sub-cultures cannot be generalised to be the same for all Asian cultures. This factor may reduce the reliability of the findings.

Anonymity

All subjects interviewed and surveyed were assured of anonymity but this factor may still have concerned some students and instructors, which may have resulted in them refraining from making certain comments or answers.

Wording of Questions

It is possible that the wording of some questions may have skewed the findings slightly. For example, questions 6 and 7 of the survey used terms that may have been viewed as unfavourable for selection by the students and could have biased findings. Question 6 from the students' interview was intended to test the students' ability to correlate theoretical information to practical scenarios. However, because of the wording used, it was felt that from the answers obtained that many students did not understand what was being tested. Consequently, comments from that question were omitted.
Uncontrolled Variables

During the interviews with the students, it was discovered that some students had previously studied or travelled abroad in English speaking countries. Consequently, it is not known if the experiences of these students would bias their responses.

Qualitative analysis

The research conducted was on a relatively small scale and only one researcher was used to analyse and group the results from the qualitative study. Although the results from the quantitative study were used to support the results from the qualitative study, it was possible that the results obtained from qualitative study could have been subject to researcher bias. Consequently, this may reduce the strength of the findings.

Language

Profile of Sung

Sung is twenty-one years old and he is studying in a foreign country for the first time. He has approximately 80 hours of flying experience and is half way through his advanced navigation training. Coming from a family of Chinese-speaking background, Sung has seldom had the chance to practice his spoken English.

The story of Sung

When I first arrived in Australia I had some problems adjusting to the Australian accent. They seem to join their words together and talk very quickly. Their colloquialisms were also unfamiliar to me. It took me a few weeks before I finally managed to adapt to the way they speak. The instructors were very good as they quickly realised that I had difficulty in
understanding what they were saying and subsequently slowed down their rate of speech when they were talking to me. They also stopped using their colloquialisms until later on in my flying when I was more familiar with them and they taught me some of their "slang".

However, even though my interactions with the instructors have improved my spoken English, I feel that there is still further room for improvement. The only time I ever speak English is when I am talking with my instructors. At the end of the day when I go back to the accommodation block I will speak in my mother tongue to my peers, as it is just more comfortable and natural to do so. Because I live on the field and can't drive, I seldom venture out to the city. Even when I do, it will be with my group of friends. Therefore, I have very few Australian friends.

**Findings and Discussion**

The survey questions that tested student perceptions on their confidence to speak English were:

Question 5. I can speak confidently in English; and 

Question 12. When talking to my instructors, I have difficulty in expressing myself.

<table>
<thead>
<tr>
<th>Question</th>
<th>Flying School One</th>
<th>Flying School Two</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agree</td>
<td>Disagree</td>
</tr>
<tr>
<td>5.</td>
<td>94.7%</td>
<td>5.3%</td>
</tr>
<tr>
<td>12.</td>
<td>15.8%</td>
<td>84.2%</td>
</tr>
</tbody>
</table>
The results from the surveys indicated that most students perceived they were confident in their ability to express themselves in English. A calculation of the bivariate correlation between the two questions indicated a statistical significance for both Flying School One ($r = 0.431, p < 0.05$) and Flying School Two ($r = 0.463, p < 0.05$).

The survey question that tested student perceptions on their ability to comprehend instructions was:

**Question 4.** My instructor talks too fast and I have difficulty in understanding him

<table>
<thead>
<tr>
<th>Question</th>
<th>Agree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>47.4%</td>
<td>52.6%</td>
<td>68.4%</td>
<td>31.6%</td>
</tr>
</tbody>
</table>

The results from the above table indicate that about half the students from Flying School One perceived difficulty in understanding what their instructor was saying due to his rate of speech or accent. This observation was consistent with what was discovered in the interviews with students. Most students from Flying School Two appeared confident in their ability to understand what their instructor was saying. However, this observation was not consistent with what was discovered in the interviews with students.

It was noted that although students from Flying School One came from a predominantly English speaking background, they still had problems understanding their instructor's rate of speech or accent. One student admitted that the instructor's rate of speech or accent was "one of the major problems" in his ability to understand what his instructor was saying. When asked whether he eventually overcame this problem, the student
replied, "not entirely, I think there are times when they give instructions and you still don't catch it. They also have their own slang". One student also said that, "I still get confused sometimes. If he says one thing, it might mean the other".

During the interview with the students from Flying School Two, all five admitted that they had difficulty in understanding what their instructor was saying because of his rate of speech or accent. Two students admitted that they still had problems sometimes in understanding their instructor. Even though responses to the question "how long did you take to overcome this problem" generated varied responses pertaining to the time they needed to adjust to the problem, all five admitted to having an 'initial' problem in understanding their instructor.

Unfortunately, the quantitative analysis did not test the initial difficulty students had when they first arrived in Australia nor did it test the time taken for the students to adapt to their instructor's rate of speech or accent. However, there was a relatively high frequency of respondents from the student interview who agreed that they had initial problem adapting to their instructors' rate of speech or accent. Therefore, it can be inferred that most students also had this initial problem.

The survey suggested that most of the students had adapted to their instructor's rate of speech or accent and were reasonably confident in understanding what their instructor said. However, based on some student responses from the interviews and results obtained from the survey, it was observed that students could sometimes become confused with what their instructors said.
The general consensus from the instructors was that these students did not seem to have a difficulty in expressing themselves nor was there indication of verb confusion. However, instructors indicated that there were occasions where students were unable to understand their instructions.

Eight out of nine instructors agreed that if the students had a better understanding of the English language, their instructional time could be reduced. This confirms that instructors perceive that misunderstandings due to language differences do exist:

I have to use less complex words to make the teaching a lot clearer. I also try to use as little colloquialism as possible because the students wouldn’t understand it.

I find myself constantly checking what I say and making sure that I’m not talking too fast. After a while it’s easy to know when the student is not following because you get that glazed look in his eyes and you’ll know straight away that he is not following.

In twin engine training, there is a minimum control airspeed and if you fall below that speed, you lose control of the airplane [sic]. Therefore, one of the things you teach is to fly power settings and attitude so you just don’t ever go near it. But I’ve had students who put the aircraft in attitudes and power settings where I physically have to fight and take over control of the airplane [sic] because they have either misunderstood or did not hear what I said. And then you’re on the edge because you’re at Vmca and low to the ground. As a result, now I usually don’t even let them get near that situation. But as a result, they get a very easy twin training.

Instructors however cautioned against the over use of simple words:

Quite often you can’t use the subtleties of English to express a point. Sometimes you have to speak in a simpler form and you miss a lot of subtleties in explaining the concept so sometimes you think that they won’t get the deep understanding because you have to make it very simple.

Quite often, you make a mistake by trying to explain something using a simple analogy in simpler English, which you know if not a very good analogy but works for the situation. Within twenty hours you are then deconstructing that analogy because it doesn’t hold any more.
Other instructors commented that problems in comprehension also occurred during traffic avoidance and time-critical situations where cockpit workload was fairly high and they were required to talk rapidly in order to give the instruction in time. One instructor who said that he had not come across verb confusion between him and his students commented that, “sometimes, they will fail to comprehend ATC instructions in controlled airspace and that’s mainly due to ATC talking too quickly and maybe running words into each other”. Three instructors agreed that their student’s inability to comprehend ATC instructions had the potential to cause some safety problems in the cockpit.

The instructors, on the whole, have a good idea of the language abilities of their students and have adapted their rate of speech to suit them. This, to some extent, reduces problems of the students understanding their instructors, but problems still arise when the students have to communicate with ATC and other pilots who are not aware that they must slow down when talking to these students.
Profile of Mathew

Mathew is thirty-five years of age and is a Grade One flight instructor. He is an Australian and has been teaching Asian students for almost four years. Apart from doing twin engine training, Mathew also conducts ground instruction. He enjoys teaching the Asian students because they are very enthusiastic and always come to class prepared.

A typical BE-76 Duchess Endorsement

A typical Duchess endorsement usually takes up about nine hours of briefing. During that time, I will cover the technical aspects of the aircraft, standard operating procedures and because this is also an initial twin endorsement, I will cover areas specific to the operation of twin engined aircraft.

When I started doing this mass brief, I had intended for the students to do all the research on their own and we would discuss why certain procedures were carried out the way they were. I believed that by running my classes in a discussion format, the students would be able to get a better understanding of the subject because they would have to think about their answers instead of just recalling facts, figures and procedures from the Flight Manual.

I quickly realised five minutes into the first brief that this was not going to work. For some reason, the students were very hesitant to voice their opinions. They would all just sit there with their backs straight against the
chair and look at me. Still I persisted and tried choosing students to answer the questions. The students whom I chose would give me “textbook” answers, which was really not what I was looking for. They also appeared to be very uncomfortable at being “picked” on.

Trying to get these students to actually think about why some procedures were carried out the way they were was simply impossible. They don’t seem to see the relevance in understanding something. All they want to do is get the information so that they can memorise it for the test.

At the end of the day, they will still have done the brief on the Duchess and should be “three bags full” on its systems and operating procedures, but have they learned or understood anything?

Findings and Discussion

The survey questions that tested student perceptions on different studying and teaching methods were:

Question 8. When studying principles of flight, I use memorisation as a primary method of learning; and

Question 15. I believe that memorising gives me a full understanding of a subject.

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<tr>
<th>Question</th>
<th>Flying School One</th>
<th>Flying School Two</th>
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<tbody>
<tr>
<td></td>
<td>Agree</td>
<td>Disagree</td>
</tr>
<tr>
<td>8.</td>
<td>100%</td>
<td>-</td>
</tr>
<tr>
<td>15.</td>
<td>5.3%</td>
<td>94.6%</td>
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</table>
The results from the surveys indicated that most students used memorising as their primary method of learning. However, there was discrepancy between the two flying schools on student perception towards the belief that memorising gives them a full understanding of a subject. Although all students from Flying School One used memorisation as a primary method of studying, they were aware that it does not give them full understanding. A calculation of the bivariate correlation between the two questions indicated a strong statistical significance for Flying School One ($r = 0.634$, $p < 0.01$) confirming this observation. Most students from Flying School Two used memorisation as a primary method of studying and believed that memorisation gave them a full understanding of a subject. A calculation of the bivariate correlation between the two questions indicated a statistical significance for Flying School Two ($r = 0.510$, $p < 0.05$) confirming this observation.

Most students from both flying schools realised that the method of teaching here was different from the method to which they were accustomed at home. Students from both flying schools commented that the emphasis on teaching in their country was on cramming information into the individual:

The difference is that back home we are basically spoon-fed. The education system is such that you do this because you have to pass. For Australia, you don’t actually have to do this or rote learn things to fly.

Back home... most of what they (the lecturers) taught us is very deep and hard to understand.

Some students commented that the reason why different teaching methods were imposed was because there was more emphasis on theoretical knowledge at home, whereas in Australia, importance is focussed on the practical side of flying:

The teaching focuses of the two countries are different. Here, the focus is on practical application.
In general, instructors felt that their students were very eager for information. They were keen to learn new things and would always come to briefings with all the required information prepared beforehand. However, all nine instructors from both flying schools found that their students tended to memorise that information without much understanding. Consequently, they had immense problems applying and relating information or skills to situations they had not previously encountered:

If they haven't done something before, where you might need a bit of logic or initiative, they find it very difficult to do it, or they don't feel comfortable in doing it. When new students arrive, the seniors will tell them what to expect that this instructor likes this and when you go here you do this and do that. So in that sense there would be a fair amount of information to rote learn.

You can have photos in this library of different airstrips and things like that so they can rote learn what it looks like. Rote learn the route and what we do in different diversions. So they're a little less open to adaptability and flexibility.

Quite often they realise that they're thinking the wrong way so what they do is that they ask more questions so they can rote learn more answers. At least it's a way of learning. But very rarely do you actually get into a conversation of real understanding.

When asked if this was one of the reasons why the students take on average slightly longer than the average Australian student pilot to become proficient, one instructor said, "well, they don't understand what they're doing". Instructors explained that they could only arm the student with certain skills and information. They would present the student with a few basic scenarios, how to handle them, and then expect the student to transfer his learning into new situations. However, one instructor expressed the opinion that students appeared to have problems doing this:

In aviation, as we all know, things are always inherently different. You might do an NDB approach like this one day, the wind is different the next day and you just need to think about when to turn for intercepts. If there were no wind, they would fly perfectly.
Due to this lack of correlation, instructors found that they had to do extra training flights of the same lesson before the student progressed.

It was observed that instructors who had been training these students for a few years either realised or have been informed that the reason why these students were very poor at critical thinking was due to way they were taught previously. When asked how he overcame this problem, one instructor said, "I don't know if you can. It's the whole approach to learning that has to change." Most instructors explained that they had come up with a method of asking questions that required two or three pieces of information so that students will be relatively forced to deduce an answer and not produce a textbook answer that they can rote learn. However, they admitted that it was hard to get the students to try and correlate answers and that some students will still be rote learning information towards the end of their course. Some instructors expressed frustration over this:

You will find that some who won't (correlate) and will just depend on rote learning to get by. It is something that is very hard to teach because they've already had twenty years of rote learning behind them".

Normally, I would start with trying to get them to understand what they're doing. But if it looks like they're not going to make the standard, I'll switch to rote learning just so they can pass the test".

It is important to note here that studying in a university is different from learning to fly an aircraft. Although both require the learning and application of theories, studying in a university is more theoretical whereas learning to fly is a more practical experience, much like driving a car. In either circumstance, memorising without understanding the theoretical side of a subject will create problems when one tries to adapt a particular piece of memorised information to a new situation. However, in learning how to fly,
one of the determining factors on the student’s progress is how fast they can transfer their learning into new situations.

**Attitude Towards Asking Questions**

**Profile of Morris**

Morris is twenty-eight years of age and is a Grade One flight instructor with two thousand flying hours. Prior to teaching Asian students, he instructed at one of the local flying schools. He is one of the many instructors in charge of conducting the basic navigation phase of the student’s training. He has instructed many Australian students through this phase of flying training and is familiar with the problems that most pilots encounter at this stage. However, he finds that Asian students appear to be very reticent when it comes to asking questions.

"Yes, I understand that you want me to say yes"

It's almost as if they are afraid to sound ignorant. I mean nobody wants to look stupid in front of others but asking questions does not necessarily mean that you are unintelligent. I always tell my students, “the only stupid question is the one that you don’t ask”. During a briefing with Australian students, they would usually question me if I haven’t covered something clearly enough. If Asian students do not understand something, they will just sit there and say nothing. This gives an impression that they’ve understood that particular piece of information and I won’t realise that their knowledge in that area is lacking until I ask a question.
I also try and make my de-briefings such that I would go through items from a flight and then give them a chance to ask questions about what's happening. Again they seem reticent to ask questions because it then seems to be an admission that they didn’t know something.

I try to make them understand that they are here to learn, and part of learning is that when you don’t understand something, you ask. Now, one response I never look for is ‘yes’, because that response usually means ‘I understand that you want me to say yes’.

Findings and Discussion

The survey questions that tested student perceptions on their attitudes towards asking their instructors questions were:

Question 3. If I don’t understanding something, I will ask my instructor to explain it again without hesitation; and

Question 10. While flying, if my instructor tells me to do something but I don’t understand why, I will still do it without hesitation.

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<tr>
<th>Question</th>
<th>Flying School One</th>
<th>Flying School Two</th>
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<tbody>
<tr>
<td>3.</td>
<td>Agree</td>
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<td>27.8%</td>
<td>78.9%</td>
</tr>
<tr>
<td>10.</td>
<td>50%</td>
<td>50%</td>
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The results from the surveys indicated that most students were comfortable with asking their instructors questions. However, there was no trend indication regarding their attitudes towards questioning their instructors’ decisions. As a result, a calculation of
the bivariate correlation between the two questions did not reach statistical significance for both Flying School One \( (r = 0.152, \ p > 0.05) \) and Flying School Two \( (r = 0.147, \ p > 0.05) \).

It was observed from the interviews that six out of ten students were comfortable with asking their instructors questions. The students explained that the instructors here were very approachable and that it created an atmosphere where they would not be afraid to ask a question if they were unclear on a subject.

Those who were not so comfortable with asking their instructors questions had varying reasons:

- I am hesitant with some of them, but once I become familiar with them, I will be comfortable to ask questions.

- If I'm not sure, normally I will ask them. But again before I ask them questions, I will think 2 or 3 times because if I ask a stupid question, they will be very sarcastic.

- They create an environment where they want you to ask questions. Otherwise you just won't say anything .... Back home if you don't ask questions it's OK because everything is on the board for you anyway so you're going to have the information in your face. But here, if you don't ask, you get nothing.

It was observed from the instructors' interview that most instructors perceived their Asian students as being very reticent to ask questions. One instructor commented that some students do ask questions and some do not. He believed that those who asked a lot of questions were those who wanted to "be here and learn".

Several instructors believed that their students were either "scared of sounding ignorant" or did not want "to be found out that they were lacking in a certain area". One
instructor mentioned that this was due to the concept of ‘saving face’ and responses from other instructors supported this. Instructors also mentioned that respect for higher authority was a reason why students were hesitant to question them:

They might be afraid of losing face.

(They) do seem reticent to ask questions because it then seems to be an admission that they didn’t know something.

There’s too much respect for the guy in authority. Which is why I think they always tend to go “yes sir” first before they understand the instruction.

As explained by one of the students, students will only be comfortable to ask their instructor questions if they were familiar with them. This hesitation to ask questions may hinder the Asian student’s progress in his flying training as instructors may believe that a student has understood a concept or an instruction when they have not.

**Command Decision Making**

**Profile of Mark**

Mark is thirty years of age and is a Grade One instructor with three thousand flying hours. Prior to becoming an instructor he was a charter pilot operating out of Bankstown, Sydney. He is one of the many instructors in charge of conducting the advanced navigation phase of the student’s training. As an ex-charter pilot, he can provide his students with a lot of ‘real world’ scenarios based on his experience. However, he finds that Asian students tend to have difficulties when it comes to decision making.
Descend to Five Hundred Feet

It is one area that I still don’t understand after all these years. Sometimes I can have people about to run into a hill and they just won’t do anything, won’t make a decision to pull up or turn around. Sometimes I create a black and white situation, like I would say, “descend to five hundred feet!” when I know that in fact it’s going to take them into a hill. They would take it down and I wouldn’t say anything nor would I take over until it was no longer safe. Then I would ask them, “well why didn’t you climb!” And they would reply, “well you said that I should stay at five hundred feet”.

If I had put an Australian student pilot in the same situation or even an Australian who has never flown a plane before, they would have seen the hill approaching and would have made an effort to do something, anything. It’s better than sitting there and doing nothing just because a higher authority has given you an instruction.

Sometimes I will put students into a situation where I will force them to make a decision. For example during a diversion, I will ask them, “so where do you think is a good place to go?” and almost immediately, they will list a series of possible aerodromes to divert to. But I will say to them, “well, you’re the pilot in command, you make a decision and take me there. I’m just a passenger.” It almost feels as if they are afraid to make a wrong decision. But that is how you learn. You make a mistake, the instructor is there to correct it and you don’t make the same mistake again. They have the ability to do it, but they don’t do it because of respect for authority.
What I am trying to teach these students is firstly, that it is all right to question authority. Secondly, I am not always going to be there to make the decision for them, if they want to survive in aviation and go on to fly on the left hand seat of a 777, they have to learn to make decisions for themselves. Finally, it is alright to make a wrong decision, as long as you learn from it.

Findings and Discussion

The survey questions that tested student perception on their ability to make command decisions were:

Question 6. I believe that I have good decision making skills; and

Question 13. When I face an uncertain situation while flying, I usually ask my instructor instructions.

<table>
<thead>
<tr>
<th>Question</th>
<th>Agree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>73.7%</td>
<td>26.3%</td>
<td>100%</td>
<td>-</td>
</tr>
<tr>
<td>13.</td>
<td>84.2%</td>
<td>15.8%</td>
<td>68.4%</td>
<td>31.6%</td>
</tr>
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The results from the surveys indicated that most students believed that they had good decision making skills. Results from question number thirteen showed that most students were hesitant to make decisions without first consulting their instructors. This discrepancy could be due to either one of two reasons:

1. The students were not forthcoming in admitting to a stranger that they were lacking; or
2. The students were unaware that they were lacking in the area of command decision making.

Judging purely from the frequency of answers, it can be inferred that the results were consistent with what was revealed in the literature review. A calculation of the bivariate correlation between the two questions did not reach statistical significance for Flying School One \((r = 0.092, p > 0.05)\) but indicated a strong statistical significance for Flying School Two \((r = 0.599, p < 0.01)\).

The particular vignette for this section was adapted from actual stories given by the instructors during the qualitative interview. Command decision making, or the lack of it, was viewed as one of the biggest problems that the instructors had with their students. All nine instructors could give examples of a training situations during which a lack of ability on the students to make a command decision led to a situation where safety was potentially compromised. This suggested to the researcher that these situations frequently occur.

The instructors raised two possible reasons as to why their students appeared to have poor command decision making skills:

1. Reluctance to question a decision made by a higher authority due to respect
2. Being reticent to make a decision for fear that it will be a wrong decision

It appeared that the reason why students tended to rely on their instructors to make the final decision was not because they did not have the ability to do it, but because they were uncomfortable with making decisions in the presence of a higher authority:

If you’re comparing it to an Australian, you’d find it very rare if someone (the Asian students) had said, “sir, I’m going to do this”.

40
We can see here as instructors that they just don’t have the confidence to do it. And I think it’s mainly because of the way they’ve been brought up. They have the ability to do it, but they don’t do it because of respect for authority.

This attitude to not question a decision made by a higher authority has been perceived by the instructors that it is so ingrained into their student’s mind that they will carry out ‘bogus’ instructions without question. This was illustrated in the first paragraph of the vignette on page 34.

An instructor also explained that this inability to make a decision in front of an authority would never dissipate completely even after many hours of training:

Even if you’ve got them further down the track, they’ll always look at you first when they say, “did you want two ILSs or one ILS?” They already knows that we only want one ILS, but they’ll always look at you first to confirm it.

The other explanation given by instructors for their students’ inability to make command decisions based was on their fear that it might be the wrong decision:

They seem very reticent to make a decision and possibly be wrong. So it comes across that in their schooling or upbringing that they’re not encouraged to make a decision and allowed to be wrong and see that as a learning experience.

It seems that it is more important for them to be right and not learn anything than to be wrong and learn something from it.

A large part of learning in aviation is based on making mistakes. Most instructors will attempt to encourage their students to make mistakes. When asked how they have tried to overcome this problem, several instructors said that they would try and let a situation go for as long as possible and only take over when they feel that safety will soon be compromised.
The instructors perceived that this inability to make command decisions could have some safety implications:

I try to instil into my guys that if I do something wrong, I want to be told and it goes from here right up to the flight deck of a 777. If the captain is going to fly the aircraft into a mountain, you've got to say something.

In the occupation that they (the students) are going to be involved, there is authority, but the captain is also fallible as well.

It can be inferred that because the ability to make command decisions must be demonstrated in a flight test, Asian students will have difficulty in displaying this. Consequently, they will take longer to train before they reach the required standard for the flight test.
Chapter 6
Conclusion

Specific Findings

The issues addressed in this investigation on the perceived effects of cross-cultural interaction were language, studying and teaching methods, attitudes towards asking questions, and command decision making.

The findings under Language were consistent with what was observed with Asian students studying in university. It appears that most students were confident in their ability to express themselves to their instructors. However, it was observed that students had some difficulty in adjusting to their instructors' rate of speech or accent. Instructors also felt that instructional time could be reduced if these students had a better understanding of the English language.

Many instructors perceived that memorisation was the biggest impediment with regards to their student's ability to learn. This finding was consistent with what was discovered in the literature review. Consequently, instructors have had to repeat the same piece of information several times before their students could gain an understanding. It is inferred that this factor would increase instructional time.

It was discovered that about half the students interviewed expressed reticence towards asking their instructors questions. This view was not shared by the instructors as most observed that almost all their students were somewhat reticent to ask questions. This reticence to ask questions may cause misunderstandings between instructors and their
students. Consequently, instructional time may have to be increased to compensate for
the lack of understanding.

The investigation revealed that the students were confident in their ability to make
command decisions. However, it was discovered that students tended to defer decision
making to the high authority. The instructors' interview revealed that their students
were reticent to make command decisions. This imposes problems as the CASA testing
requirements indicate that students need to demonstrate the ability to make operational
decisions quickly and correctly.

**Implications of the Study**

Given the findings, it is reasonable to assume that both students and instructors are
aware of the difficulties that cross-cultural interaction have posed. However, the lack of
research found in this area shows that the importance of cross-cultural interaction has
not been recognised in *ab-initio* flight crew training.

The results highlighted in this study have shown that language barriers and different
cultural expectations can lead to a reduction in safety margin in training and an increase
in learning time. Instructors have indicated that they have raised their personal safety
margins to a higher level when training these students. Consequently, these students
will have little experience in handling critical situations, as they are not exposed to
them. Learning time is also increased because instructors have to carry out the same
lessons several times before their students can progress. Consequently, the cost of
training these students is increased.
Recommendations

The effects of cross-cultural interaction first need to be recognised as an important factor in determining the rate at which a student learns at the *ab-initio* level. It is only when the effects of cross-cultural interaction on *ab-initio* training are recognised and addressed within the flying school and within the aviation community that the problems and deficiencies in flight instruction may decrease.

A large number of the limitations of the research could have been minimised or prevented by conducting a study through participant observation instead of interviews and surveys. Participant observation would have allowed the researcher to study the interaction between students and their instructors first hand. It is recommended that such a study be conducted to obtain a deeper insight into the effects of cross-cultural interaction on *ab-initio* flight crew training.

A cultural adaptation course needs to be developed to address and reduce the language barriers and cultural differences between the Asian and Australian culture. The course should be administered to both the Asian students and their instructors. Some elements of the course should be:

1. Language orientation courses. Some Australian universities now run orientation courses for their foreign students that include interaction with local students in an effort to allow foreign students to become accustomed to the local accent and rate of speech. This form of orientation may be transferred into aviation.

2. Reflective journals. In order for students to move away from the paradigm of memorisation, it is necessary to demonstrate the importance of correlation and understanding. Reflective journals have been a useful tool in getting students to
think about what they have done, and how they can correct it. Briefly, a basic reflective journal entry would include a log of experiences encountered during the day, what happened, how it happened, why it happened and how to overcome the problem should it occur again. Such a journal would allow students to correlate incidents and apply this information to correct their mistakes in the future. Instructors also have to be taught how to use such journals to their greatest advantage.

3. Ground based scenario training. According to Jensen (1995), scenario based training is an effective way of teaching pilot judgement because they permit verbal responses by everyone (p. 182). In such training, a particular scenario is given in the classroom and students are to work in groups of two or three to deduce a solution. It is possible that the introduction of scenario-based training may improve the Asian students' ability to make command decisions.
References


Appendix A

A-1 Instructors Interview Consent Form

A-2 Students Interview Consent Form

A-3 Survey Statement of Disclosure
STATEMENT OF INFORMED CONSENT

The topic of this study is The Perceived Effects of Cross-cultural Interaction on Flight Crew Training. The purpose of the study is to investigate whether Cross-cultural Interaction influences flight crew training and deals specifically with Asian students and Anglo-Australian instructors.

This research will focus on the perceived effects of cross-cultural interaction from both the student and instructor's point of view. Emphasis has been placed on how it may have influenced the overseas students' training experience and how they have responded to these influences. Recommendations, if necessary, may then be made to improve their training experience.

This interview should take no more than 30 minutes. Your identity will be in no way traceable. However, if you feel uncomfortable with the questions asked, you may choose to discontinue the interview. The interview will be tape recorded and transcribed. The tape will then be destroyed and you will be given an opportunity to read the transcription and amend any part, which you feel uncomfortable with.

Any questions concerning the project entitled The Effects of Cross-cultural Interaction on Flight Crew Training can be directed to the investigator, Daniel Goh on 0411-647-140.

I (the participant) have read the information above and any questions I have asked have been answered to my satisfaction.

I agree to participate in this activity, realising I may withdraw at any time.

I agree that the research data gathered for this study may be published provided I am not identifiable.

Participant ........................................ Da. ................................
Investigator .......................................... Date ..........................
STATEMENT OF INFORMED CONSENT

The topic of this study is The Perceived Effects of Cross-cultural Interaction on Flight Crew Training between Asian Students and Anglo-Australian Flight Instructors. The purpose of the study is to investigate whether cross-cultural interaction influences flight crew training and deals specifically with Asian students and Anglo-Australian instructors.

This research will focus on the perceived effects of cross-cultural interaction from both the student and instructor's point of view. Emphasis has been placed on how it may have influenced your training experience and how you have responded to these influences. Recommendations, if necessary, may then be made to improve your training experience.

This interview should take no more than 30 minutes. Your identity will be in no way traceable. However, if you feel uncomfortable with the questions asked, you may choose to discontinue the interview. The interview will be tape recorded and transcribed. The tape will then be destroyed and you will be given an opportunity to read the transcription and amend any part, with which you feel uncomfortable.

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I (the participant) have read the information above and any questions I have asked have been answered to my satisfaction.

I agree to participate in this activity, realising I may withdraw at any time.

I agree that the research data gathered for this study may be published provided I am not identifiable.

Participant .................................... Date ..............

Investigator .......................... Date ..............
A-3 Survey Statement of Disclosure

Anonymous Questionnaire

This is an anonymous questionnaire. Please ensure that you do not write your name, or any other comments that will make you identifiable, on the attached. By completing the questionnaire you are consenting to take part in this research. As such, you should first read the Disclosure Statement below carefully as it explains fully the intention of this project.

Disclosure Statement

The topic of this study is The Perceived Effects of Cross-cultural Interaction on Flight Crew Training between Asian Students and Anglo-Australian Flight Instructors. The purpose of the study is to investigate whether cross-cultural interaction influences flight crew training and deals specifically with Asian students and Anglo-Australian instructors.

This research will focus on the perceived effects of cross-cultural interaction from both the student and instructor's point of view. Emphasis has been placed on how it may have influenced your training experience and how you have responded to these influences. Recommendations, if necessary, may then be made to improve your training experience.

This questionnaire should take no more than 30 minutes. Your identity will be in no way traceable. However, if you feel uncomfortable with the questions asked, you may choose to discontinue. The answers from the questionnaire will be tabulated and analysed statistically.

Any questions concerning the project entitled The Perceived Effects of Cross-cultural Interaction on Flight Crew Training can be directed to the investigator, Daniel Goh on 0411-647-140.
Appendix B

Interview and Survey Questions

B-1 Instructors Interview Questions

B-1 Students Interview Questions

B-3 Survey Questions
B-1 Qualitative questionnaire for instructors

1. Do language considerations ever cause you to change the teaching methods that you would normally apply on local students?

2. Due to language hindrances, do you leave out secondary information, which may help the students’ understanding during the brief/debrief?
   - How much?

3. Compared with Australian students do you find it necessary to more often restructure your briefings in order to assist student comprehension?

4. Do the problems relating to the student’s inability to comprehend what you mean ever become a safety threat whilst in flight or on the ground? E.g. Takeoff power, not take off power.

5. Do you feel that if these students had a better understanding on the English language, their instructional time could be reduced? Or maybe the quality of their learning can be enhanced?

6. In your experience, how does the time taken for the average Asian student to become a proficient pilot compare with the time required for the average Australian student?

7. In terms of command decision making, do you feel that because of their culture, these students are more submissive and tend to avoid command decision making?

8. Compared to local students, do you find that your students tend to memorize principles of flight (e.g. excess thrust in a climb) without understanding them?
   - As such, when a question similar to what he’s memorized but slightly different is asked (e.g. What component of thrust allows an aircraft to climb?), do students tend to have problems providing an answer?

9. Do your students ask a lot of questions? Why do you think they do/don’t?

10. Compared to local students, do you frequently observe situations in which you explained something to a student and then asked him, “do you understand?” and his reply was ‘yes’ but you later realized that he obviously did not?

11. Do you feel that they are more attentive during briefing than the average Australian student?
B-2 Qualitative questionnaire for students

1. Do you like studying in Australia? What do you like about it?

2. Is there a difference between studying in Australia and studying back home? Can you tell me more?

3. When you first arrived, did you have difficulty in understanding what your instructor was saying because of his accent/rate of speech?
   - Did you eventually overcome this problem?
   - How did you overcome this problem?
   - How long did it take you to overcome it?
   - Did you tell your instructor about the problem?

4. Do you find that you have this same difficulty in communicating with ATC and other pilots?
   - Do you feel if that affects your training?
   - Why?

5. When being taught theory, do you find that the way you’re being taught is different from what you are used to back home?
   - Did you have problems adapting to this method?
   - Which method do you prefer?

6. Do you experience difficulty in applying information obtained in the classroom to the situations experienced when flying.
   - For example, the symptoms approaching a stall.

7. How do you feel about asking your instructor questions? Are you hesitant or anxious?

8. When you first arrived in Australia, were you excited at the opportunity to study overseas? Did you continue to feel that way after about two—three months in Australia? What do you think about studying overseas now?

9. Do you ever miss home? Do you feel that that has affected your flying training?

10. Do you have friends who are local Australians? Do having these friends reduce the tendency to miss home?
**B-3 Survey Questions**

1. In general, studying in Australia is different to studying in my homeland.
   - Strongly Agree: 1 2 3 4 5 6  Strongly Disagree

2. I am confident to talk over the radio with ATC and other pilots.
   - Strongly Agree: 1 2 3 4 5 6  Strongly Disagree

3. If I don't understand something, I will ask my instructor to explain it again without hesitation.
   - Strongly Agree: 1 2 3 4 5 6  Strongly Disagree

4. My instructor talks too fast and I have difficulty in understanding him.
   - Strongly Agree: 1 2 3 4 5 6  Strongly Disagree

5. I can speak confidently in English.
   - Strongly Agree: 1 2 3 4 5 6  Strongly Disagree

6. I believe that I have good decision making skills.
   - Strongly Agree: 1 2 3 4 5 6  Strongly Disagree

7. When flying, if I encounter a problem not shown to me before, I can confidently adapt what I have learned to solve the problem.
   - Strongly Agree: 1 2 3 4 5 6  Strongly Disagree

8. When studying principles of flight, I use memorisation as a primary method of learning.
   - Strongly Agree: 1 2 3 4 5 6  Strongly Disagree
9. When talking over the radio I find that I must concentrate and work hard to
pronounce each word that I say.

Strongly Agree 1 2 3 4 5 6 Strongly Disagree

10. While flying, if my instructor tells me to do something but I don’t understand why, I
will still do it without questioning him.

Strongly Agree 1 2 3 4 5 6 Strongly Disagree

11. If I don’t understand something, I tend to ask my friends to explain it and will only
ask the instructor as a last resort.

Strongly Agree 1 2 3 4 5 6 Strongly Disagree

12. When talking to my instructor, I have difficulty in expressing myself in English.

Strongly Agree 1 2 3 4 5 6 Strongly Disagree

13. When I face an uncertain situation while flying, I usually ask my instructor for
instructions.

Strongly Agree 1 2 3 4 5 6 Strongly Disagree

14. When flying, if I encounter a problem not shown to me before, I take a long time in
considering my response before acting upon it.

Strongly Agree 1 2 3 4 5 6 Strongly Disagree

15. I believe that memorising gives me a full understanding of a subject.

Strongly Agree 1 2 3 4 5 6 Strongly Disagree