THE IMPACT OF MULTIMODAL TEXTS ON THE DEVELOPMENT OF ENGLISH LANGUAGE PROFICIENCY

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Chapter One

Multimodal Texts and English Language Proficiency

The global nature of English in today's world necessitates proficiency in the English language. In many countries, English language proficiency is used as a benchmark to assess an individual's inclusion or exclusion in regard to politics, the economy, society and education. The dominant role that the English language plays in these domains specifies that access is guaranteed only through a person's command or proficiency in the English language. This dominant position that the English language assumed has resulted in the marginalisation of many people (Al-Salman, 2007; Holland, 2002). This is particularly obvious in the field of education, especially in English speaking countries such as the United States or where English is taught as a second language. Learners who do not speak English as their native language are faced with the task of learning English so that they are able to compete for educational as well as employment opportunities, alongside native speakers even in non-English speaking countries such as Malaysia.

Keeves and Darmawan (2007) maintained that it was pertinent to make distinctions between the different language environments in language learning. In language learning environments the term often employed was 'English Language Learner' (ELL) to refer to a student who "has a first (home, primary or native) language other than English and is in the process of acquiring English" (*The Knowledge Loom Literacy*, 2004, p. 2). Similar terminology, such as 'limited minority students', 'English as a second language (ESL)', 'culturally and linguistically diverse (CLD)' and 'limited English proficient students (LEP)' were used interchangeably to refer to English Language Learners (*The Knowledge Loom Literacy*, 2004, p. 5).

In Malaysia where this study is conducted, language policies such as the *1957 Razak Report* and the *1967 National Language Act* promoted *Bahasa Melayu* (BM) as the medium of instruction in all state-backed learning institutions with English language taught as a second language (Denny, 2001; Gill, 2005; Ridge, 2004). The promotion of Malay as the

national language was done with the intention of giving Malays equal economic opportunities as well as unifying the ethnic groups (Hassan, 2005). Published research writings indicated that often a distinction is made between second language and foreign language acquisition. A second language was

> a new language learned without the aid of formal instruction through naturalistic exposure, perhaps by long-term residence in a society where the language is spoken.
>
> Long (1998, p. 1)

Long (1998, p. 1) also defined foreign language as a context where

> the target language is studied in a formal instructional setting, typically a classroom, in a society in which that language is not normally used as a means of communication.

Both these definitions do not appear to suit the context of English language learning in Malaysia as the students learn English through formal instruction in a classroom. However, English is also a means of communication in the corporate setting, media and society. There appears to be some confusion over the use of 'second' and 'foreign' language terminology because of the dominance of North American research in education. However, Asian countries are very different from the United States. Because of this confusion, neither 'second' nor 'foreign' language is extensively used in this research study. The term 'English Language Learning' and English Language Learners' are used to refer to the English language learning context in Malaysia throughout this research study.

In East Asia as well as Malaysia, English is generally taught and learnt in schools. Often, due to the heterogeneity of learner characteristics such as age, gender, ethnicity, state of origin, family language background and learning needs, as well as teaching methods that do not cater for this diversity, students are unable to obtain the English language level that is regarded as proficient to participate in an academic setting. In the present research study that unfolds in Malaysia, the English language learners are heterogeneous in their characteristics. The student respondents are enrolled in *Universiti Pendidikan Sultan Idris* (UPSI), a university located in Tanjong Malim, Perak, offering pre-service teacher education programs. The course that is used to teach and assess whether these students are capable of participating effectively in the English language aspects of the academic discourse of the University is the Communicative English One (CE1), an English language proficiency course. Students who can pass successfully this course are able to graduate from their study programs.

In countries such as the United States, United Kingdom and Australia, English language learners face many problems in trying to master the English language. Research has indicated that these learners might lag academically as a result of their low levels of English language proficiency (Liaja-Rodriguez, Ochoa and Parker, 2006). The final report on the *Study of Content Area Assessment for English Language Learners* prepared for the Office of English Language Acquisition and Academic Achievement for Limited English Proficient Students in the United States, highlighted various studies related to achievement and English language proficiency (Katz et al., 2004). Some of the studies showed a significant relationship between academic achievement and language proficiency while others did not. The authors of the report claimed that many studies of English language proficiency were shrouded with confusion as there was no clear model or definition in regard to what language proficiency was and this view was also supported by Bialystok (1998). An important observation raised by Katz and his colleagues was that "measuring language proficiency in itself was a complex task" (p. 7). This could be a factor influencing why so many issues surround this mastery of the English language among English language learners in English speaking countries around the world.

Considerable funds and resources are allocated in English speaking countries to overcome these learners' language proficiency problems. Schools, as well as institutions of higher learning, design and organise language support programs to help these learners. Much research is also conducted in these areas so that solutions can be found to overcome English language proficiency problems.

In the context of the present study that is conducted in Malaysia, students are expected to be proficient in *Bahasa Melayu* (BM) which is the national language as well as the mother tongue (L1) of Malays in Malaysia. However, there is a substantial proportion of students in Malaysian schools, approximately 35 per cent, whose mother tongue is not *Bahasa Melayu* but Chinese (Mandarin), Tamil or English (less than one per cent). For these students, BM is their second language. Malaysian students are also expected to become proficient in the English language which is taught in schools. The Chinese or Indian students can also choose to learn their mother tongue (L1) at school under the 'Pupil's Own Language' (POL) program.

In Malaysia, low levels of English language proficiency had resulted in serious concerns among both politicians as well as educators. The local newspapers regularly reported issues with regard to low English proficiency levels of students in Malaysia. The seriousness of these issues was clear when it was highlighted that 40,000 graduates from public universities in Malaysia were unemployed in 2002 due to their limited English language proficiency (Gill, 2004b). This called for affirmative action. Politicians and educators in Malaysia began to acknowledge the dominant role of English language in global politics, the world economy and education, through the various measures that were executed. This was first obvious in the mandate issued by the then Prime Minister, Tun Dr Mahathir Mohammed. Tun Dr. Mahathir announced in 2002 that, beginning in 2003, all Science and Mathematics subjects, which were previously taught in *Bahasa Melayu* (BM), the official language, would be taught in English at the tertiary level, Form Six, Form One, Standard One and eventually at all levels (Gill, 2004b). This was clearly a move to address the decline of English language proficiency among Malaysian students. However in 2009, it was indicated that this policy is to end in 2012. Deputy Prime Minister Tan Sri Muhyiddin said that although it was not a complete failure, the policy did not achieve what it was supposed to achieve (Zalkapli, 2009). The Malaysian Government has decided to revert back to the use of *Bahasa Melayu* in the teaching of Science and Mathematics in schools, but not in universities.

In addition, it was announced in a local daily newspaper that was widely read by the Malaysian public that the Malaysian University English Test (MUET) would be revised at the beginning of 2008 (Chapman, 2007). The MUET was introduced in 1999 as a diagnostic tool to assess the English language proficiency of learners intending to pursue tertiary education. The test assessed learners' listening, speaking, reading and writing abilities and categorised them into six bands: Band One identifying on 'Extremely Limited User'; Band Two – 'Limited User'; Band Three – 'Modest User'; Band Four – 'Competent User'; Band Five – 'Good User' and Band Six on 'Very Good User' (refer to Appendix 1.1). The chairperson of the MUET syllabus revision committee, Datin Dr. Zubaida Alsree, who was also the Dean of the Postgraduate Institute of *Universiti Teknologi Mara*, claimed that this revision was necessary in order to address the issue of low English proficiency of learners before they began their tertiary education (Hariati, 2007). Zubaida stated that if learners were not proficient in English, they would not be ready to participate in the academic 'Discourse'

(written with a capital D) of the university that required them to speak, understand, read and write widely in English as well as *Bahasa Melayu*. Gee (1990) distinguished 'discourse' from 'Discourse' with a capital 'D'. According to Gee, a 'discourse' was "connected stretches of language that makes sense" but a 'Discourse' on the other hand was "a socially accepted association among ways of using language, of thinking, feeling, believing, valuing and for acting that can be used to identify oneself as a member of a socially meaningful group or social network" (Gee, 1990, p. 143). In order to be included in the Discourse of an academic community, students had to display the ability to use English language in the way that was expected and required of them (Carrasquillo & Rodriquez, 2002; Hakuta, Butler & Witt, 2004) by the particular community, that is, the course planners, administrators and instructors of a specific course and in this instance, Communicative English One (CE1).

Moreover, Datuk Mustapa Mohamad, the Higher Education Minister in 2006, announced that undergraduates who had completed their final year examination would be required to enrol for a month-long intensive English language course. He said that *Universiti Malaya*, the premier university in Malaysia would be the first university to practise this. The Minister stated that this course would be compulsory for all undergraduates who had obtained Bands 1 to 3 in the MUET as well as those with a cumulative grade point average (CGPA) that was below 3.0 (Simrit Kaur, 2007). The need for a more succinct education system that addressed various deficiencies and shortcomings, one of them being English language proficiency problems of Malaysian learners, was evident. Thus in early 2007, the then Prime Minister, Datuk Seri Abdullah Ahmad Badawi, launched the National Education Blueprint 2006-2010 and said that he wanted schools to produce learners who were not only literate, but who could think creatively as well as critically (*The Star Online*, 17 January, 2007).

What these statements indicate is that the government currently acknowledges that there is an existing problem with regard to the English language proficiency of Malaysian students. Measures are being taken to address this problem as limited English language proficiency is likely to hinder a person's ability to compete for opportunities in the global economy equitably. English in Malaysia is clearly the language of the international corporate sector and international commerce. The inability to communicate proficiently in English was likely to result in unemployment for many graduates because the corporate sector was

prepared to employ only people who were proficient in English (*The Star*, May 13, 2008). Since, the civil service, which predominantly employs BM as the language of communication, can only offer jobs to a limited number of graduates: those who are not proficient in English face unemployment.

Limited English language proficiency can also affect access to information and knowledge. In a study carried out by Lavoie and O'Neill (1999), it was found that approximately 80 per cent of websites were in English and, to support this, Gill (2005) asserted that knowledge in the English language increased at such an alarming rate that the inability to access information would marginalise people. On the verge of globalisation, lack of English language proficiency could become a serious problem for Malaysians as access to knowledge, resources and information dictated the need for English. Malaysian students had no choice but to access information in English. This problem was exacerbated by the fact that *Dewan Bahasa dan Pustaka*, the Malaysian Literary and Language Agency, which was set up in 1956, had only managed to translate some 374 books into BM over a period of 39 years, with tertiary institutions publishing just over 168 books in BM (Gill, 2005; Ridge, 2004). Moreover, if learners were to further their studies abroad, their limited language proficiency could be an obstacle as many English speaking countries such as the United States, United Kingdom and Australia dictated the need for English language proficiency levels that allowed students to participate in the academic 'Discourse' community of these countries without problems. At the present time in 2010, Malaysian students who intend to further their studies abroad are required to sit for English proficiency tests such as the IELTS and TOEFL and obtain at least a Band of 6 for undergraduate and Band 7 for postgraduate studies (in IELTS) or a score of 550 (in TOEFL) before even being considered by a tertiary institution.

A review of the literature related to English language proficiency yields an abundance of research conducted in the past with regard to English language learners. However, it is not possible to pinpoint a research study with reference to English language learning that addresses three important issues: (a) the desirable levels of English language proficiency identified through an English Proficiency Test, (b) the use of Needs Analysis to ascertain learner needs, as well as (c) the advancement of Multimodal and Language Proficiency

through the use of multimodal texts. It is possible that these three components are interrelated both directly and indirectly and influence English language proficiency.

1.2 Background of the Study

It is clear that Malaysian students have no choice but to become proficient in English language usage in order to be included in the academic 'Discourse' community while in the university and for employment once outside. Learning English is difficult for these students as not only are they faced with the task of learning about other cultures, but they also have to master vocabulary, intonation, pronunciation, syntax, meaning, spelling, and usage of English that is a complex language. Furthermore, these learners are pressed to learn English in a setting that has additional constraints such as students' multiple places of origin, languages, customs and cultures.

1.2.1 English Language Proficiency

Although, the findings of previous research had indicated that the acquisition of the first language (L1) facilitated the learning of the second language (L2) (Binbin, 2001), this was not the case for Malaysian students. Giridharan and Enriquez (2002) argued that in most cases, there was a negative transfer in the learning of English. This could be because BM, which was the national language as well as the language taught in schools, did not share similar characteristics with English. Additionally, researchers argued that learners often did not succeed in achieving a native-speaker level in English as they had not attained a high level of performance in their national language (BM) and in many cases their first language (Chinese or Tamil) (Department of Multicultural Education, 2003). This too could be a contributing factor to the English language proficiency problems of many Malaysian students.

Research findings had also indicated that there were countless other factors such as motivation, attitude, age and socio-cultural background, as well as societal factors that influenced language learning (Balderrama & Diaz-Rico, 2006; Emmitt, Pollock & Komesaroff, 2004). It must be noted that the students who attend universities in Malaysia come from diverse ethnic backgrounds and speak many languages and dialects. Table 1.1

lists the different ethnic groups and well as ethno-linguistic groups that are represented among the undergraduates in most universities in Malaysia.

Table 1.1

Ethnic and Ethnolinguistic Groups of Malaysians

Ethnic Groups	Ethnolinguistic Groups
Malay	Malaccan, Negeri Sembilan, Eastern Peninsular, Western Peninsular, Riau, Sabahan, Sarawakian, Tioman Islander
Chinese	Cantonese, Hainanese, Hakka, Hokkien, Mandarin, Teowchew, Hokchiu, Hoklo, Hsiang, Hui, Min Bei, Min Dong
Indian	Tamil (others),Tamil (Jaffna), Telugu, Malayalam, Sinhalese, Sindhi, Punjabi
Indigenous	Bajau, Bidayuh, Iban, Kadazan-Dusun, Dayak, Melanau

Source: (Gordon, 2005; Population and Housing Census, 2002)

The official and national language in Malaysia is BM, commonly known as 'Malay'. English is formally taught in schools and is the dominant language of the corporate sector. In some national schools, Tamil and Mandarin are subjects that students can study under the Pupil's Own Language (POL) program. Other languages spoken in the country are Chinese dialects (Mandarin, Cantonese, Hokkien, Hakka, Teochew, Hainan, Foochow), Indian languages (Tamil, Telugu, Malayalam, Punjabi) as well as several indigenous languages. It is reported that there are 145 languages used in Malaysia of which 130 are tribal. They have been termed 'minority languages' (Gordon, 2005; Serve Asia, 2006; The Official Portal of Ministry of Tourism, 2007). Some students are monolingual and others are multilingual. Some are able to listen, speak, read and write proficiently in their mother tongue, and the national language (BM) that is their second language. Others may be able to understand and speak their mother tongue, but are unable to read and write in this language. There may also be students who are able to understand, speak, read and write BM as well as English fluently. Finally, there may be students who can only understand, speak, read and write in BM proficiently. It is also possible that the students' L1 is English and this may be an influencing factor in English language proficiency development. However, in Malaysia such students are very few in number.

Spolsky et al. (1968) cited in Spolsky (1989) raised the pertinent question "What does it mean to know a language?" (p. 140). Spolsky claimed that unless a succinct definition of language proficiency was derived and formally specified, one could not assert to have assessed it. The same views would appear to be shared by various researchers and reports (Bialystok, 1998; Department of Multicultural Education, 2003; Kramsch, 1986; Liaja-Rodriguez, Ochoa and Parker, 2006; *Wyoming English Language Development Standards for Limited English Language Learners*, 2003). The following questions must be asked: What do key players in academia, as well as course designers, planners and implementers perceive English language proficiency to involve? What are learners expected to have mastered when they are assessed to identify if they are proficient in English? Are learners deemed proficient in English language as long as they are able to take part efficiently in informal and formal everyday social settings or do they have to employ the language competently in formal scholastic settings as well? Confusion with respect to this even among assessors and researchers and the inability to come out with clear guidelines has contributed to assessments that are not governed by acknowledged themes, models or procedures. This inadvertently may be contributing to English language learning problems.

1.2.2 Needs Analysis

Additionally, previous research had also found that often views of the most important stakeholders of a course, namely, the students, were not considered when courses were designed (Benesch, 2001; Leki, 2000; Tajino et al., 2005). Chapter 2 of this thesis reports on the various research studies which found that the needs of the learner often did not complement the course's aims and objectives. This resulted in course content not meeting the needs of the students. Scholars had argued that English for Academic Programs (EAP) often ignored the lifeworld issues of learners and this often affected their learning activities. Furthermore, it was a widely held opinion that most academic programs merely expected learners to integrate into existing academic 'Discourse' communities, without taking into consideration their prior experiences and backgrounds (Dudley-Evans, 2001; Leki, 2000). Scholars had also suggested that the designing of EAP courses should be based on the cooperation and collaboration of everyone concerned, such as learners, teachers and administrators (Leki, 2000; Tajino et al., 2005). A needs analysis could facilitate this. Consequently, it was suggested that a needs analysis was an integral part of course planning

as it provided valuable information regarding the language needs of language learners. Benesch (2001, p. 64) advocated that needs analysis would take "learners' lifeworlds outside the ESL classroom into consideration, surpassing texts and grammar in order to enable them for future educational experiences". She further suggested that

> through faculty surveys, examination of academic writing assignments, analysis of textbooks, observation of classes, and interviews with students, needs analysis offers detailed information about linguistic and cognitive challenges students face in academic settings. (p. 64)

A needs analysis study is thus important in the development of a program because it can inform course instructors of students' needs, expectations and requirements of the English language courses. This facilitates the planning and implementation of the course. A needs analysis study prior to the course is then likely to be beneficial to course instructors as they are able to gauge student needs and tailor the course to meet these needs with the actual implementation of the teaching and learning process. This is especially significant in the development of learners' language proficiency. Failure on the part of course planners to conduct a needs analysis study prior to course implementation can also contribute to poor performance and achievement in language courses.

Apart from this, the learning of a language in itself is perceived to be a difficult process. It is therefore vital to make the teaching and learning process simpler for learners. Thus creating a language learning environment that is authentic, flexible, interactive, systematic, as well as grounded on learners' previous knowledge and experiences, is certainly likely, to facilitate the learning process. Studies have shown that for language learning to take place, instruction needs to be based on real-life contexts and is graspable. Moreover, technology facilitates the language learning process and it is especially effective in the instruction of English language learners. With technology and multimodal texts, English language learners can learn to listen to and speak in language laboratories, speak with Skype or voice chats, practise listening skills from radio and television, listen to and read from captions or subtitles in television programs, as well as to read and write through computer communication such as chatrooms, discussion boards and emails. Students' formal classroom experience can be reinforced with informal learning through the use of technology.

1.2.3 Technology and Multimodal Learning

Research has emphasized that technology was able to create a language learning environment that was interactive, collaborative as well as situated (Clovis, 1997; Kasper, 2000; New London Group, 1996; Tan, 2006; Warshauer, 2000). For example, the email, chat room and discussion board provided English language learners with the opportunities to interact with other speakers of the target language in a stress-free environment. Technology also allowed learners to write in real life contexts. Learners could create their own blogs and web pages and collaborate, as well as network, with other people who shared similar views or thoughts about the topics that they were writing (Lacina, 2005). Learning could also become more meaningful and contextualised with the use of technology (Hall, 2001; Warshauer, 2000). The existence of 'virtual tours' and 'Webquest' web sites allowed for language learning to take place through simulated activities (Lacina, 2005). This made language learning more situated and grounded in everyday life. Learners were provided with opportunities to connect learning with living. Thus learning became more meaningful and opportunities were created for embedded learning to ensue.

Research had also shown that learners had no problems moving from one medium of communication to another for meaning, but that teachers tended to privilege "continuous, uninterrupted prose texts" (Millard & Marsh, 2002, p. 55). Research studies had also stressed that in everyday life, communication was increasingly becoming visual or multimodal in nature (Thesen, 2001). However, university-based literacy practices leant strongly on a formal, written load. This disjuncture between everyday communication and academic literacy practices resulted in learners seeing living and learning as two separate activities. It had also been suggested that there was increasing criticism of the way "the study of representation is focused on language as the medium of communication in western literate societies" (Thesen, 2001, p. 133). Thesen argued that, for learners who had problems with English language proficiency, experiencing written language in various forms and for achieving a variety of purposes would be beneficial.

Snyder (1997) argued that ever since electronic technologies appeared in classrooms, literacy practices had changed. She stated that technologies such as hypertext, emails, word processing and the internet required new ways of reading and writing. This view was

supported by Pally (2000) who suggested that traditional literacy should give way to meeting the demands of new literacy skills. She also reiterated that new technologies played a large part in students' lifeworlds. As such, she was of the opinion that they should be a part of classroom instruction. Hence, technology-generated captions, labels, notes, messages, lunch orders, songs, poems, stories, recounts of daily experiences could be used in the language learning program to demonstrate as well as generate talk on how language could be used in the teaching and learning process (Emmitt, Pollock & Komesaroff, 2004). Bringing the texts that are already part of learners' lifeworlds into the language learning classroom may facilitate the development of English language proficiency for most learners.

Acknowledging a more diverse semiotic landscape in the academic 'Discourse' might "open up new meaning potential which may bring academic conversation closer to a range of people from different socioeconomic backgrounds and literacy practices" (Thesen, 2001, p. 135). It was not in the line with this argument that printed texts in the proficiency courses needed to be replaced with technology-based, multimodal texts. However, the inclusion of these texts, which were already a part of learners' lifeworlds, might facilitate the language learning process. For, at a time where "literacy is increasingly thought of as participation in social practices, rather than a neutral psychological skill, it becomes important to recognise the practices and values students may bring to school" (Emmitt, Pollock & Komesaroff, 2004, p. 210). Thus the use of multimodal texts and informal multimodal communication procedures adds a new dimension to English language learning. Learning is transferred from a formal instruction to a less formal one that is more like the informal situation that occurs in second language learning. However, while listening skills can be developed through the viewing of TV and listening to the Radio, speaking skills are only developed in language laboratories or the telephone and in face-to-face discussion.

Consequently, formal programs that involve the development of all four skills of reading, writing, listening and speaking through instruction in syntax, grammar, vocabulary, spelling and pronunciation are required, although procedures for checking some of these aspects can assist learning. Nevertheless, the situation in which learning takes place is largely formal.

1.2.4 The Emergence of Problems

The discussion above clearly highlights various issues and problems in regard to both English language learners and acquiring English language proficiencies in a communicative program. A review of the research literature reveals the problems associated with the acquisition of language proficiency. English language learners need not be held solely responsible for failing to master the language. The inability of scholars and experts to agree on a shared definition on what constitutes the English language proficiency, as well as to acknowledge the diversity of learners' backgrounds and the experiences they bring to the language learning environment, often amplifies the problems. It is also common among language course designers and planners to disregard the needs of the learners by not conducting a needs assessment of what is expected of or required by learners. Courses are often implemented without consideration as to what is in essence required by language learners, their learning styles and preferences. A lack of awareness of teachers in institutions of learning, of the importance of needs assessment often results in the implementation of courses that do not complement both necessity and supply.

Additionally, traditional classroom practices of teachers also contribute to the language learning and behavioural problems of learners. With the advent of computers and the development of information and communication technologies, learning need not occur solely through the print media or 'chalk and talk'. Teacher-directed approaches may become obsolete as learners today have the capability to direct their learning based on their needs and wants. Inability on the part of teachers to acknowledge this often results in learner frustration and hinders efficient mastery of the language being learnt. Blogs, web pages, movies, songs, billboards, emails and short as well as medium messaging systems represent the more authentic means of language teaching and learning as they are grounded in the learners' lifeworlds and characterize the reality of today's world of learning. The learning of a language shifts from the informal situation to the more formal situation that is characteristic of English language learning in Malaysian classrooms.

The problems faced by language learners are vast and are often compounded by irregular implementation of policies that do not take into consideration learners' native language, the different levels of proficiency in which they are situated when they come into

the learning environment as well as ambiguous guidelines of what constitutes academic language. Failure to recognise this often results in whole populations being affected by the inability to master a particular language: in this instance, the English language. It is necessary to identify more specifically the problems involved. The next section presents a statement of the problems arising in this research study.

1.3 Statement of Problems

1.3.1 Lack of Common Definition of Proficiency

Linguists would not appear to share a common definition of 'proficiency' and researchers have argued that unless a consensus was reached on a common definition, it was not possible to claim to have assessed it (Bialystok 1998 ; Department of Multicultural Education, 2003; Kramsch, 1986; Liaja-Rodriguez, Ochoa and Parker, 2006; *Wyoming English Language Development Standards for Limited English Language Learners*, 2003). The predicament of assessing an individual's proficiency when there are no clear definitions or guidelines as to what characterizes proficiency generates a mammoth task. The argument in this particular related discipline is that if there are no clear standards against which proficiency can be assessed then there are likely to be inconsistencies in assessment of performance. This lack of consensus with regard to a clear and concise definition for proficiency is also apparent in the Malaysian English language curriculum specified by the *Kurikulum Bersepadu Sekolah Menengah* (KBSM) which is roughly translated as the 'Secondary School Integrated Curriculum'. The KBSM syllabus was grounded theoretically in a communicative approach (Ratnawati Mohd Asraf, 1996). Before the communicative syllabus was introduced, a structural syllabus was tested. The KBSM English language curriculum for secondary schools stated that its aim was

> to extend learners' English language proficiency in order to meet their needs to use English in certain situations in everyday life, for knowledge acquisition, and for future workplace.
>
> (*Sukatan Pelajaran Kurikulum Bersepadu Sekolah Menengah*, 2000, p.2)

The KBSM syllabus did not explicitly define what was meant by 'situations' in everyday life' and 'future workplace' (Das, 1984; Gaudart, 1986; Ratnawati Mohd Asraf, 1995). Ratnawati Mohd Asraf argued that "a lack of clarity in the statement of aims make it difficult to determine the level of proficiency expected of learners…resulting in the lack of

direction in teaching activities" (Ratnawati Mohd Asraf, 1995, p. 3). Consequently, learners who enrol in the English language courses already face problems with basic interpersonal communication skills. Mastering the four skills of listening, speaking, reading and writing in an academic context becomes more difficult for these learners. What is referred to as 'cognitive academic language proficiency' (CALP) affects their successful completion of the course and indirectly affects their self-esteem and confidence. Ultimately, these learners are assessed based on their knowledge of the English language rather than their ability to use it in communicational settings. Students in the CE1 course are assessed through a paper-based test. Although the CE1 instructors' plan states that a proficient learner is one who is able to listen and understand conversations, this is not assessed in the examination. Additionally, students are only assessed on their ability to take part in a public speaking task over five to seven minutes. This in no way assesses their ability to take part in discussion, conversations and role plays, as listed in the instructors' plan and curriculum design of the course. While the syllabus of the CE1 course suggests that both learners' language performance and production are the basis of assessment, the final examination is comprised purely of a production-based assessment.

1.3.2 Varying Levels of Proficiency

Generally, the students who study in *Universiti Pendidikan Sultan Idris* (UPSI), the research setting, range in age in years from the early 20s to the mid 40s. UPSI is a popular choice for many students who aspire to become teachers as it is known for its history of teacher education, having produced some outstanding teachers who also subsequently became nationalists. In addition, UPSI is also much sought after because of its strategic location. Figures 1.1 and 1.2 present maps of Malaysia and the State of Perak respectively. UPSI is the most accessible university from the east coast. As a result, a large portion of the student body comes from the States of Kelantan, Terengganu and Pahang. It must be noted here that the people of these states are predominantly Malays and thus the language of communication is usually *Bahasa Melayu* (BM).

Figure 1.1 Map of Malaysia

Source: (www.malaysia-maps.com/malaysia-states-map.htm)

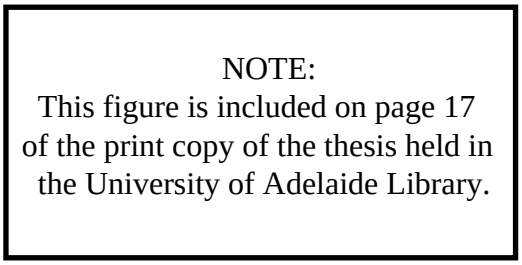

Figure 1.2. Map of the State of Perak

Source: (www.malaysia-maps.com/malaysia-states-ap.htm)

Undergraduates in UPSI enrol for a three or four year program depending on the qualification sought and their prior experiences. In-service teachers complete a three-year study program whereas pre-service teachers enrol for a four-year program. The students are required to sign up for two English proficiency courses: Communicative English One (CE1) and Communicative English Two (CE2) and pass both these courses with a minimum grade C which is equivalent to 50 marks (refer to Appendix 1.2) as well as obtain a minimum Band of 3 on the Malaysian University English Test (MUET) before they are allowed to graduate. The students do not have to enrol for any other English proficiency courses during their study program once they have obtained these requirements. English language is used for the teaching and learning of Science and Mathematics as well as ICTs in the University. BM is the language of instruction for all other programs. It is thus necessary to emphasize that this study investigates the limited proficiency phenomenon only from the CE1 perspective. Many of the students who enrol for the CE1 have low English language proficiency. This is observed from their MUET bands as well as *Sijil Pelajaran Malaysia* (SPM) English language grades. These students generally fall within Bands 1 to 3 or have obtained Grades 7 or 8 which is equivalent to a pass.

The students enrolled for the CE1 course can be characterised by their diverse backgrounds. They come with different entrance qualifications, that is, *Sijil Pelajaran Malaysia* (SPM), *Sijil Tinggi Pelajaran Malaysia* (STPM) or Diplomas from any one of the following disciplines: Business and Economics, Engineering, Information Technology, and Social Science and Humanities. Additionally, they enrol with different English language grades. Some of the students register for the course with the Malaysian University English Test (MUET) English language Band of either 1, 2, 3, 4, 5, or 6. Others enrol with an English language grade achieved in the SPM examination that ranges from A1 ($75 \geq$ marks), A2 ($70 \geq$ marks), C3 ($65 \geq$ marks), C4 ($60 \geq$ marks), C5 ($55 \geq$ marks), C6 ($50 \geq$ marks), P7 ($45 \geq$ marks), P8 ($40 \geq$ marks) to F9 ($39 \leq$ marks). The CE1 students also come from English-speaking or non-English-speaking homes. Finally, the students in the CE1 course comprise different ethnic backgrounds. There are Malay, Chinese, Indian and indigenous students. It is possible too that these students enrol for the CE1 with different needs as learners and have had different experiences with technology. All these characteristics make the CE1 students very heterogeneous. Thus it is possible that all these attributes may contribute to different

levels of proficiency. However, this heterogeneity is not taken into consideration in the teaching and learning process. There is no placement test conducted at the beginning of the course to gauge the different levels of proficiency that the students enter with. Students are not grouped according to the proficiency levels and are generally perceived to be homogenous. Planning lessons that are characterised by 'one size fits all' can contribute to the proficiency challenges that are faced by the CE1 students. Nevertheless, under a social constructional approach, the students at least in part teach each other, so varieties in levels of performance may be useful.

Additionally, it is also possible that student characteristics are affecting proficiency levels. Not much consideration is usually given to this aspect when proficiency levels are examined. Investigating this phenomenon can add value to lesson planning and teaching.

1.3.3 Needs Assessment

Research findings indicate that the views of the most important stakeholders of a course, the students, are not considered when courses are designed. Students are simply expected to integrate into existing academic 'Discourse' communities without taking into consideration their prior experiences and backgrounds (Burgess & Owens, 2003; Dudley-Evans, 2001; Leki, 2000). Although, there is agreement that the effectiveness of an educational program is dependent on the "planning, implementation, evaluation and change" (Burgess & Owens, 2003, p. 3) and that needs analysis is the ultimate step in designing a course, such as English for Academic Programs (EAPs) the lifeworld experiences of learners are ignored and this affects the learning activities. This is evident in the current research setting. There is no documented proof of a needs analysis having been conducted since the CE1's inception in 1997.

The CE1 teaching module was revamped in 2006. However, a needs analysis was not conducted. No surveys were carried out in the faculty and neither were there any observations of the teaching and learning process of the CE1 classroom. Students were also not interviewed regarding their needs or challenges faced in the CE1 course (Nallaya, 2006). Since, the views of the most important stakeholders, that is, the students enrolled in the CE1,

were not taken into consideration in the designing of the course, this could be a contributing factor as to why they found the CE1 course a major challenge.

1.3.4 *Lack of Acknowledgement for Learners' Technological Experiences*

Research findings have indicated that learning a language in itself was perceived to be a difficult process and for learning to take place efficiently, instruction needed to be based on real-life contexts (Fresno, 2001; National Research Council, 2000). However, a sizable part of the instruction provided was often detached from reality. Studies have demonstrated that technology was able to create a language learning environment that was interactive, collaborative as well as situated (Clovis, 1997; Kasper, 2000; New London Group, 1996; Tan, 2006; Warschauer, 2000). Furthermore, multimodal texts, a sub-section of technology, played a large role in learners' real life experiences. Multimodal captions, labels, notes, messages, lunch orders, songs, poems, stories as well as recounts of daily experiences were already a part of learners' lifeworlds. Learners had no problems moving from one medium of communication to another to make meaning but teachers tended to privilege "continuous, uninterrupted prose texts" (Millard & Marsh, 2002, p. 55). Although, everyday communication was increasingly becoming visual (Thesen, 2001) or multimodal, university-based literacy practices leaned strongly towards formal, written approaches.

This disjuncture between everyday communication and academic literacy practices results in learners seeing learning and living as two separate activities. Traditional classroom practices employed by some of the CE1 instructors may contribute to language learning challenges faced by CE1 learners. Teaching and learning that occur solely through the print media and 'chalk and talk' may not be as efficient in the current information and communication era. Inability on the part of CE1 instructors to acknowledge multimodal texts such as blogs, web pages, movies, songs, billboards, emails, and short as well as medium messaging systems as more authentic means of language teaching and learning may disengage learners and force them to see learning and living as separate. Although, CE1 learners are familiar with technology and multimodal texts as they commonly employ the internet, listen to songs, watch movies, send and receive texts on their cell phones, chat in chat rooms and send emails outside the classroom, a large part of the repertoire of texts in the teaching and learning process are comprised solely of print texts. Learners, who already struggle with the

language learning task due to language policies implemented in the past, may have different proficiency levels. In addition, there may be a mismatch between learning needs and the actual implementation of the course. The lack of a more diverse semiotic landscape in the CE1 classroom may also fail to "open up new meaning potential which may bring academic conversation closer to a range of people from different socioeconomic backgrounds and literacy practices" (Thesen, 2001, p. 135). UNESCO (2000, p. 4) suggested that language programs had to find innovative ways of meeting learner needs while enhancing motivation through language policy and planning, empowerment and community participation, instruction and materials design. Finally, this study investigates if the English language proficiency of students changes over time through the regular practise of English language skills (listening, speaking, reading and writing) with multimodal technologies and texts. The next section of this discussion focuses on the goals of this research study.

1.4 Comments on the Aims and Objectives of the Research Study

There is a lack of consensus regarding the definition of 'English language proficiency'. Some researchers have viewed proficiency as a multifaceted component made up of different units whereas others have analysed it as a single element (Oller & Damico, 1991; Vercchio & Guerrrero, 1999). This lack of accord between scholars has resulted in 'English language proficiency' being defined from different perspectives. Discussion in the previous section raises important issues regarding the inconsistencies in relation to definitions of 'proficiency'. This indirectly affects the language learning behaviours of students. Lack of clarity with regard to the characteristics of a proficient individual, and criteria of qualities and skills assessed in the language learning process, contributes to uncertainty in learner performance and ultimate learning outcomes. It is thus the aim of this research study to review initially the available research literature to ascertain what linguists identify as proficiency and decide on an appropriate definition that can be employed to contribute to better learning outcomes, specifically with regard to the CE1 course.

Besides the use of resources and materials that complement both the teaching and learning process and learners' lifeworlds, it is also important to examine if courses meet learners' needs and expectations. A mismatch between the curricular aims and objectives of a

course and the learner's needs may result in poor learning outcomes. Learners enrol in courses offered by tertiary institutions for various reasons and may or may not share common goals. However, for the duration of the course they are expected to share a collective identity and this may affect learning. Thus a needs analysis must be carried out before courses are designed so that the views of actual stakeholders are taken into consideration. Preliminary discussions with course administrators indicate that a needs analysis has not been carried out for the CE1 course. It is then an aim of this research study to conduct a needs analysis to obtain "detailed information about linguistic and cognitive challenges students face in academic settings" (Benesch (2001, p. 64) specifically with regard to the CE1 course. The findings can also illustrate if a learner seeks to align with course aims and objectives, besides identifying if course planners' perceptions of the learners' needs and the needs that the students express complement each other.

Although, students who fail to obtain distinctions in the English language paper of the *Sijil Pelajaran Malaysia* (SPM) Examination or Band 4 in the Malaysian University English Test (MUET) are required to enrol for this course, each student may come to the course with different levels of proficiency in English. Additionally, the students who enrol for the CE1 are heterogeneous in their characteristics. It is hence important to examine if there is a relationship between levels of English language proficiency and student characteristics. This can inform the teachers and course planners about the types of texts, together with exercises that are likely to be beneficial to the students. The course can then cater for the general needs of students with regard to students' proficiency levels as well as their characteristics. Language learning tasks that are matched with student characteristics and levels of proficiency may motivate them to participate more actively in the classroom and ultimately contribute to the development of English language proficiency.

Generally, the ranges of texts that are part of the language learning tasks in the CE1 classroom do not include multimodal texts. However, these texts play a large role in students' lives. Observations show that students in the CE1 course seem to find it easier to read these types of text even though they are in English. Previous research suggests that multimodal texts become part of the language learning classroom. Students are believed to be more media and technologically knowledgeable, compared with their teachers (Kellner, 2004) and this can

be exploited in the classroom. Multimodal texts can be used as platforms for discussion about society and culture. Multiple communication techniques such as video, audio and graphics that are generally found in multimodal texts can be used to encourage interaction and learning. Thus this study also investigates the forms of multimodal technologies and texts to which students in the CE1 course have access, how frequently they use multimodal technologies and texts to learn English, as well as how frequently they use the English language for university activities. Finally, it is the aim of this study to investigate if the regular practice of listening, speaking, reading and writing with multimodal technologies and texts can improve English language proficiency and hence provide answers to whether multimodal texts impact on the development of English language proficiency.

1.5 Significance of the Study for Language Teaching and Learning

Previous research writings suggested that there had been many debates regarding the definition of 'English language proficiency' and its importance in the academic Discourse community (Oller & Damico, 1991; Vercchio & Guerrrero, 1999). This affects the planning and assessment of language courses. Furthermore, since most tertiary institutions use proficiency test scores for entrance, it is important to share a common definition so that all proficiency tests assess the same modalities, that is, listening, speaking, reading and writing. Course planners, administrators as well as instructors need to share a common definition of English language proficiency so that courses are planned and taught in order to address the skills that encompass proficiency. This study is then important as the findings can provide insights as to how scholars define English language proficiency. The study can also investigate theories that guide definitions and possibly highlight the importance of employing a language syllabus that is grounded on theory.

This study can also inform the academic community of the value of conducting a needs analysis before designing proficiency courses. The findings can also motivate course planners, instructors, administrators as well as students to cooperate so that both program and course outcomes are more appropriate since they can be designed from a consideration of the students' needs. Furthermore, the findings can also inform course planners of the possible

inadequacies of existing language proficiency programs. This can lead to a re-examination of the curriculum in order to achieve better outcomes.

Communication today encompasses a broader meaning to include multiple text-types that comprise various semiotic codes such as icons, symbols, visuals, graphics, animation, sound and pictures. A large amount of time is spent answering emails, surfing the net for information or pleasure, using cell phones to send messages and watching television. Furthermore, students are familiar with these texts and generally do a considerable amount of reading and writing in relation to these types of texts. Thus the findings of this study can inform Malaysian and other educators of the effectiveness of employing these kinds of texts in the classroom. The findings can also show how multimodal texts impact on the development of English language proficiency. The findings can be especially useful in helping to make decisions as to whether these texts ought to be made a part of the repertoire of texts in the teaching and learning of English language proficiency programs. In addition, the findings of this research can inform educators, course designers, academics as well as key workers in tertiary institutions as to whether the regular practice in the use of the English language together with the use of multimodal texts, can result in the improvement of students' English language proficiency. The findings can also provide ideas for tertiary institutions on whether language proficiency courses ought to include multimodal texts in the course content, and structure and in assessment. Thus the findings of this study can provide evidence on whether language learning through multimodal texts is one way of overcoming the low English language proficiency of students in Malaysia.

1.6 A Personal Perspective

From the discussion in previous sections, it can be concluded that students in Malaysia are confronted with English language proficiency problems. This predicament can result from various factors such as the language policy changes of the post-independence era, unclear definitions of what is required of a proficient speaker of the English language, course designers who fail to take the learners' needs into consideration, as well as inability of course planners and administrators to contemplate learners' lifeworlds. Students' lack of English language proficiency becomes especially serious when the students enrol in tertiary studies.

The bulk of published information both in print and on screen exists in English. Tertiary students who are overwhelmed by their lack of English language proficiency can be seriously marginalised by this disability, especially with the advent of communication technologies where dissemination of information is spread rapidly.

Tertiary students' lack of English language proficiency becomes a serious problem when it is recognised that English is taught from the primary school level onwards in Malaysia. Having been instructed in the English language for 11 to 12 years of their lives at school, learners still appear to come to a university education with a command of the language that is well below the recommended level. Instructors in the universities often lament about learners' inability to participate in classroom discussions due to their lack of English language proficiency. Additionally, students also tend to produce written assignments in English that are below expectations because of this. Discussion with course instructors also indicates that students appear to be poorly motivated in the teaching and learning process. It is thus pertinent to investigate this problem. As a lecturer of an English language course in a university in Malaysia that offers pre-service as well as in-service teacher education programs, I am often plagued by questions regarding my students' lack of English language proficiency. I often wonder about the definition of 'English language proficiency' and the importance of language proficiency in an academic Discourse community. I am also unsure as to whether the English language courses that I teach along with my colleagues meet the needs of learners and contribute to the development of their English language proficiency. I am often in a quandary when preparing for lessons, as I do not know the levels of English language proficiency at which the learners who are enrolled for my courses are located.

Consequently, I am well aware that my learners' lifeworlds are made up of many types of multimodal texts and I am curious as to whether these contribute to my language development. I am also uncertain if the regular use of these types of texts results in the overall improvement of my learners' language proficiency. More importantly, I wish to know if the students enrolled in my courses find it useful. It is all these questions that form the thrust and purpose of this research study. Hence, this thesis seeks to address these questions by studying 'The Impact of Multimodal Texts on the Development of English Language Proficiency.

Chapter Two

Review of Previous Research into the Acquisition of English Language Proficiency

The discussion in the previous chapter emphasises that the process of language learning is complex, with many factors influencing the learning process. In the context of this research, students come to the learning task with different qualifications, levels of proficiency, family backgrounds, ethnicity, needs and life experiences. Any one or more of these factors can influence the development of English language proficiency. Consequently, the language learning process can be influenced by socio-cultural and societal as well as psychological factors. Additionally, proficiency courses that are not guided by clear definitions of what is required of the learner, not grounded in clear theoretical frameworks or not directed by learner needs or life experiences can contribute significantly to low achievement or learner difficulty in acquiring native-like proficiency. Hence, it is the prerogative of course planners, administrators as well as teachers to take into account all of these factors and provide the opportunities for the most optimal learning experiences.

Succinct statements of what the learning institution requires of a 'proficient' student, language learning skills that are grounded in theory, identification of the learners' needs and their levels of proficiency are necessary. It is also important to identify texts that are popular in their lives. All of these would inform the academic community of the kinds of support that would be required by learners to become proficient in the language learning task (Hall, 2001; Peregoy & Boyle, 2005; Wilson, 2003). Additionally, scholarly publications indicate that there is a lack of reported findings with regard to the use of psychometric techniques in relation to research on language proficiency. Thus this chapter provides a review of previous research that can: (a) guide this research study, (b) draw attention to the different definitions of proficiency that are employed by scholars, (c) underline the significance of needs analysis, and (d) illustrate how technology and more specifically multimodal texts can facilitate the language learning process. Furthermore, the chapter discusses previous studies that are related to the use of information technology that can be shown to advance English language learning.

Since the crux of this research study is the development of English language proficiency, it is essential to derive a clear understanding of how the research literature defines the term as well as what it encompasses in the academic 'Discourse' community. The next section reviews definitions of the term 'English language proficiency'. It is obvious from the discussion in the previous chapter that there is a lack of consensus with regard to a definition of this term. This failure to achieve consensus contributes to the many shortcomings in the way language courses are taught and assessed. The following section identifies some of the definitions of 'English language proficiency' employed and popularised by linguists and scholars.

2.1 English Language Proficiency

Research indicates that there is a lack of consensus regarding the definition of 'English language proficiency' as some researchers view 'proficiency' as a large and complete component made up of different units whereas others see it as a unitary element. This lack of agreement between scholars has resulted in 'English language proficiency' being defined from several different perspectives. Bialystok (1998) admonished linguists whom she said contributed to inconsistencies in the definition of proficiency. She argued that they discussed language as if it were tangible and could be measured with tools. She also asserted that language disabilities were described without justifying the standards against which they were assessed. Bialystok suggested that the definition of proficiency was very much based on the theoretical perspective of the scholar attempting to define it. Hence, linguists who subscribed to different theoretical schools defined it according to their theoretical perspectives. She also reiterated that a common definition of proficiency was necessary and that this could be achieved through both observation and description, involving research.

Kramsch (1986) argued that the definition of 'proficiency' stipulated by some organisations had also been significant in encouraging scholars to altogether reject the use of the term 'proficiency' and creating new terminology (see also *A Study of Content Area Assessment for English Language Learners*, 2004). The American Council on the Teaching and Foreign Languages (ACTFL), for example, claimed that learners were proficient when they knew how to convey their intention correctly and succinctly in accordance with the requirements of the context. This definition was criticised by some researchers as being oversimplified and not taking into account various ideas, such as aptitude and competence, as

well as the latest developments in language teaching (Katz, Low, Stack & Tsang, 2004). However, there were organisations that employed a more readily understood, unambiguous definition of proficiency.

The *Wyoming English Language Development Standards for Limited English Language Learners* (2003) stated that agreeing on a common definition of 'English language proficiency' was no easy task. It presented different definitions propagated by scholars. De Avila (1990) was cited in this report as advocating for 'proficiency' to be defined both conceptually and empirically. He claimed that "conceptually, language proficiency refers to those linguistic elements necessary for successful communication with the school environment" (p. 16) and "empirically, language proficiency consists of both receptive and productive skills, input and output, information sent and received" (p. 16). De Avila added that proficiency in each of the oral and literacy skills of listening, speaking, reading and writing was necessary towards achieving academic success. The report further expounded on Chomsky's contention that a proficient individual was one who was knowledgeable about the system of language "including rules of grammar, vocabulary and how linguistic elements are combined to form comprehensible sentences" (p. 16).

Thus a proficient person was one who knew how to employ this knowledge in specific contexts. The report further characterised a proficient English language student in the state of Wyoming as one who:

> (a) met characteristics in the advanced level of English language proficiency according to English language development standards in listening, speaking, reading and writing, (b) achieved successfully in classroom settings where English was the primary language of instruction, (c) performed within the proficient range on district, grade-appropriate, formative assessment measures, (d) demonstrated ability to use cognitive, academic language to achieve grade-appropriate tasks in listening, speaking, reading and writing, (e) demonstrated a composite score of 'proficient' on an English language development assessment instrument, and (f) demonstrated successfully competence in social and academic settings that was comparable to that of native English peers.
>
> (Wyoming English Language Development Standards for Limited English Language Learners, 2003)

Previous research have indicated that there was definitely a relationship between oral proficiency and academic language proficiency. It is perceived that the development of oral proficiency augmented the development of academic proficiency. Cummins (1991) for

example, had distinguished between Basic Interpersonal Communicative Skills (BICS) and Cognitive Academic Language Proficiency (CALP). This distinction is particularly important to the context of the present research study. The students of the Communicative English One (CE1) are involved in obtaining CALP. According to Cummins, it was easier for students to achieve oral proficiency, that is, BICS, as it was informal and did not require complex cognitive processing. Furthermore, learners were able to obtain oral proficiency faster, as it usually happened in a more stress free environment. Once learners were proficient with their basic interpersonal communicative skills, the mastery of academic language proficiency was facilitated. CALP referred to the "use of conceptual knowledge as a tool for learning across content areas" (Gonzalez, Yawkey, Minaya-Rowe, 2006, p. 204). Gonzalez et al. (2006) asserted that when students were proficient in CALP, they would be able to acquire verbal or non-verbal concepts through the use of prior knowledge and the formation of new concepts. These scholars also argued that pre-literacy and literacy skills of English language learners would emerge when they had achieved both BICS and CALP in the first language. On the other hand, learners who had not developed CALP in their first language would face problems when mastering another, and possibly would always be 'semi-lingual' in both languages (Laija-Rodriguez, Ochoa & Parker, 2006).

Cummins (1981b) also distinguished between two types of language proficiency: 'context-embedded' and 'context-reduced' which were also referred to as 'cognitively undemanding' and 'cognitively demanding'. The cognitively undemanding communicative tasks were those "in which the linguistic tools have become largely automatized (mastered) and thus require little active cognitive involvement for appropriate performance" (p. 14). "Cognitive demanding tasks required active cognitive and linguistic involvement" (p. 15). Cummins argued that the main aim of any literacy instruction was to develop the learner's ability to participate in context-reduced, cognitively demanding tasks. Cummins' (1991) distinction between BICS and CALP, was sometimes identified as the 'threshold hypothesis', and were frequently discussed by scholars when attempting to define 'proficiency'. Cummins' (1991) perspectives on language proficiency were also criticised for their lack of emphasis on the sociocultural aspect of language learning behaviour (*A Study of Content Area Assessment for English Language Learners*, 2004; Department of Multicultural Education, 2003).

However, there were those who saw proficiency as four macro skills of listening, speaking, reading and writing. This characterization of proficiency was considered useful for assessment as well as for admission purposes into tertiary institutions (Dunworth, 2001). In Australia, the Council of Chief State School Officers (CCSSO) (1992) used this perspective to define 'proficiency'. According to the CCSSO, a fully English proficient student was

> able to use English to ask questions, to understand teachers and reading materials, to test ideas, and to challenge what is being asked in the classroom.
>
> (Vecchio & Guerrero, 1995, p. 4)

Thus a proficient student in the language would be able to use the following four skills,

> Listening: the ability to understand the language of the teacher and instruction, comprehend and extract information and follow the instructional discourse through which teachers provide information.
>
> Speaking: the ability to use oral language appropriately and effectively in learning activities (such as peer tutoring, collaborative learning activities, and questions/answer sessions) within the classroom and in social interactions within the school.
>
> Reading: the ability to comprehend and interpret text at the age and grade-appropriate level.
>
> Writing: the ability to produce written text with content and format fulfilling classroom assignments at the age and grade-appropriate level.
>
> (CCSSO, 1992, p. 7)

Canale's (1994) definition of proficiency subscribed to the idea that proficiency was not purely a linguistic event. He argued that, in order to be proficient, learners should not only be able to use the appropriate linguistic elements but should know when and where to use them as well. Thus a proficient student was one who knew how to use language skills in a specific context. These scholars defined proficiency from a socio-cultural perspective. They believed that discrete linguistic elements alone would not convey meaning.

Canale (1994), for instance, saw language as linguistic parts that developed within a culture for the purpose of conveying the beliefs and customs of that culture. Canale argued that a proficient student was one who not only knew how to select the linguistic item appropriate for a particular instance but was also able to see how the whole of this operated in communication and the kinds of meaning it conveyed in different contexts.

For Canale (1994) and other researchers who shared this view of proficiency, a proficient student would be someone who was constantly reordering linguistic information and knowledge to match context specific needs at particular moments in time. Canale's view of proficiency was very similar to Gee's (1990) theory of 'Discourse'. A student in an academic setting needed to be able to display the ability to use the specified academic language in particular courses and programs so that they would be acknowledged and welcomed by the academic 'Discourse' community (Gee, 1990).

Based on the discussion above, it can be surmised that in academic discourse, English language proficiency is always measured in the context of listening, speaking, reading and writing. Thus a proficient student can be defined as someone who displays the ability to understand most standard speech, in addition to academic lectures and has the speaking proficiency equivalent to that of an educated native speaker in relation to fluency and accuracy in all aspects of the language system. The student is able to participate in any conversation. The proficient student is also able to read, comprehend, process and appreciate a wide range of texts, both critically and creatively. They are able to gain new knowledge from the texts they read and form hypotheses. This student is also able to understand both explicit as well as implicit messages conveyed by the texts that are read. Furthermore, the student needs to be able to write fluently and accurately, employing the vocabulary and language system required for each particular context and audience in order to express views, opinions and arguments clearly and concisely. This is the approach to 'English language proficiency' that is employed by the researcher in the present research study.

A summary of this discussion on definitions of proficiency raises various pertinent issues. Scholars advocate that there must be an unambiguous standard against which the characteristics of proficiency can be measured. It is also the contention of researchers that a general definition cannot necessarily apply across the board as factors such as the learners' primary language proficiency, background and culture need to be taken into consideration. However, most scholars generally agree that learners must have an underlying knowledge of the language system and the ability to use this knowledge as and when the situation dictates. Additionally, the research literature suggests that there is an interdependence between oral proficiency and academic language proficiency. Scholars reiterate that weakness in one of these forms can affect overall attainment of proficiency. Consequently, it is their opinion that

proficiency in the learners' L1 (first language) can influence performance in L2 (second language). The research literature also commonly discusses proficiency with regard to the four skills of listening, speaking, reading and writing. Finally, with the advent of sociocultural theories, contemporary linguists today seriously promote the inclusion of sociocultural elements when defining proficiency.

The research literature shows that in an academic setting, English language proficiency is almost always assessed based on listening, speaking, reading and writing skills. Ability to listen, speak, read and write is the ultimate basis of students' proficiency levels. Learners have no choice but to display their competence in these skills in order to be perceived as proficient English language learners by course administrators. An English language proficiency test is almost always the standard instrument that is used to identify the level of proficiency at which a learner is situated. In the context of this research study, the students enrolled in the CE1 course need to be able to display their ability to use the four skills of listening, speaking, reading and writing in English language at an appropriate level so that they are able to complete successfully the particular courses chosen.

English language learning and teaching bodies around the world adhere to descriptors that categorise learners into different bands or levels of proficiency. These standards are usually employed as measurement benchmarks which grant or deny access into the academic 'Discourse' community. The next section focuses on the numerous proficiency levels employed by English language teaching and learning bodies around the world.

2.2 English Language Proficiency Levels

Language teaching and learning governing bodies around the world utilise different standards to characterise proficiency levels (refer to Appendix 2.1). The use of language proficiency scales in assessment is popular for two reasons: (a) scales enable transparency of assessment in educational systems, and (b) particular language testing bodies place an emphasis on describing what a language learner is able to do. North (2000) attributed the popularity of language proficiency scales to the following factors: (a) learners were able to compare themselves to specified stereotypes, (b) the reliabilities of the tests were specified, and (c) there were common standards that assessors were able refer to. English language proficiency

assessment bodies around the world such as the Wisconsin Administrative Rule, ACT COMPAS, and the Malaysian Examination Board used such scales in their assessment of learners (refer to Appendix 2.1).

An analysis of the descriptors of the instruments and scales indicate that the two levels that fall within the higher part of the continuum commonly grant a learner access into the academic 'Discourse' community (refer to Appendix 2.1). A learner who is situated within either one of the top two levels may be recognised as a proficient language user. However, employing the definition specified for the purposes of this research study, a learner is only identified as a 'fully proficient language' user when he or she demonstrates the ability to listen, speak, read and write in various contexts for a variety of audiences, employing the appropriate language systems with a particular awareness of the academic culture. A fully proficient language learner must also be able to read various types of text both critically and creatively to derive both implicit and explicit meaning. They also need to be able to write various types of text both coherently and cohesively, presenting their views, opinions and arguments for a variety of audiences.

A review of the research literature shows that discussion about English language proficiency regularly relates to literacy as well. Scholars seem to suggest that although proficiency and literacy are two different attributes, there is definitely an overlap between the two. Furthermore, there is general agreement that literacy levels are best assessed through proficiency tests (Dunworth, 2001; Roberts, 2005). For example, whether a person is literate or illiterate is often identified by the ability to read (Roberts, 2005). Hence, although the aim of this research study is to investigate the development of English language proficiency, it is argued that it is necessary to include some discussion on literacy as well, especially since there is an overlap between the two aspects.

2.3 Literacy

With regard to definition, 'literacy' seems to share the same predicament as 'proficiency' does. There is much debate as to how 'literacy' is best defined. The inconsistencies in definition raise much confusion, especially with regard to research. Literacy can mean different things in different contexts. An individual can be literate in one context and illiterate in another as there are different modes of literacy. Thus someone can be academically literate

but technologically illiterate. Besides this issue, there are different degrees of literacy and this raises further confusion. Can a person, who is able to display a basic level of literacy be defined as literate alongside another who is able to be described as functionally literate? Furthermore, contemporary research suggests that, literacy cannot be meaningfully defined purely based on a person's ability to read and write (Emmitt, Pollock & Komesaroff, 2004; Meltzer, 2001). With the advent of technology, the definition of literacy is clearly lacking if people are assessed to be literate or illiterate based only on their ability to read and write print. Although, many arguments have been advanced with regard to the definition of 'literacy', for the purpose of this study, the focus is primarily on literacy in an academic context. In order for a person to be considered literate in an academic context, that person should have the ability to use the English language in the way that is expected and required of an individual (Carrasquillo & Rodriquez, 2002; Hakuta, Butler & Witt, 2000) by the academic community, that is, course planners, administrators and instructors of a particular course.

In the debate regarding the definition of 'literacy' Olson (1977) viewed literacy as two discrete abilities that involved cognition and culture. Olson's (1977) Great Divide theory clearly distinguished between the 'spoken' (semantics) and 'written constructs' (syntactics) of language. Olson stated that speech communicated meaning with the assistance of extra-linguistic elements in the surrounding environment, whereas written text relied on linguistic units within the text itself. Hence, in specific instances, people who were able to read and write were still perceived as illiterate because they could not comprehend some text that had highly technical or contextualised language, such as religious scriptures. Olson's view was contested by other scholars who argued that language, whether spoken or written, was dependent on the context for interpretation (Snyder, 1990). Thus it was in the context of interpretation that meaning changed. Over a period of time, Olson changed his segregated view of spoken and written language and suggested that literacy encompassed the complementary interaction of both speech-based and text-based skills (in Snyder, 1990).

More recently, scholars have advanced the view that that the four language skills of listening, speaking, reading and writing, needed to interact with each other for communication to take place effectively. This involved how a person thought about or acted in the environment (Gee, 2001). Thus, the view of literacy had begun to shift from a discrete linguistic ability of "word recognition, word attack, phonic and comprehension skills" to a

socio-cultural perspective (Emmitt, Pollock & Komesaroff, 2004, p. 8). Literacy was viewed by scholars, not as a static body of knowledge, but an element that constantly evolved in the process of producing, collecting or communicating meaning (Meltzer & Hamann, 2006). Thus a literate learner was defined as having the ability to "use reading, writing, speaking, listening and thinking to learn what they want or need to learn and communicate or demonstrate that learning to others who need or want to know" (Meltzer, 2001, p. 10). It must be noted here that this definition of 'literacy' emphasised the verb 'use' thus, a literate student is not just someone who can listen, speak, read or write but who is able to use these abilities for generating new information and knowledge that is socially constructed. Hence, students who are literate are those who are able to use other forms of literacy such as information literacy, technological literacy and digital literacy, with their language skills to produce new information (Meltzer & Hamann, 2006).

There were also scholars who proposed that literacy in the twenty-first century should encompass a broader definition to incorporate the advent of information and communication technologies (Cope & Kalantzis, 2000; Pally, 2000; Walsh, 2006). These scholars advocated that the existing definitions of literacy focused too much on "behavioral and cognitive psychology" (Tan, 2006, p. 1). They argued that such a definition did not allocate room for creativity, innovation and other values significant in the twenty-first century (Tan, 2006). Scholars also contended that since students used different learning styles to learn, an emphasis on one mode of text, such as print, could disadvantage some learners (Vincent, 2005), especially those who were oriented towards visual or kinaesthetic styles of learning. Therefore, the definition of literacy needed to take into account the different modes by which language could be used to communicate meaning. In the twenty-first century, print is not the only meaning-making tool. Communication is possible through sound, image, video and written forms simultaneously. Consequently, literate learners were individuals who were able to employ a suite of skills that enabled them to exploit the advantages of the diverse modes of representation and communication and to participate in global learning communities (Tan, 2006). Literacy in this paradigm was viewed as a plural notion and termed 'multiliteracies' so as to incorporate various forms of literacies such as visual literacy, media literacy and computer literacy (Cope & Kalantzis, 2000; New London Group, 1996).

Closer to the context of this study, the term 'literacy' takes on a more significant meaning as Malaysia seeks to become an industrialised nation by 2020. Sheikh Kadir (2003, p. 3) stated that Malaysia had made many conscious attempts to improve and develop literacy among its people, proposed that

> one of the challenges of the Vision 2020 is to create a Malaysian society which possesses the characteristics of pursuing excellence, as well as a knowledgeable and informed society which would be respected by others. In line with this challenge, the reading culture is the pillar for moulding excellent thinkers and intellectuals.

She added that in a survey carried out in 1996 by an international-based research company on behalf of the National Library of Malaysia, it was found that

> 93 per cent Malaysians aged 10 years and above are literate. Actual reading practice of Malaysians is 87 per cent. Malaysians read an average of 2 books a year. 12 per cent are able to use personal computers. Twenty-nine per cent use the library services.
>
> (Sheikh Kadir, 2003, p. 4)

In another survey conducted by the National Library of Malaysia regarding the types of reading material chosen by Malaysians, it was found that 70 per cent read newspapers, 52 per cent read books, 47 per cent read magazines and 32 per cent read comics. Besides this, the findings showed that

> those in the age group of 15 to 44 years prefer newspapers but subsequently interest declines; magazines are read mainly by those in the age group of 15 to 34 years after which interest declines and interest in books and comics declines after the age of 24 years, the decline is more rapid for comics.
>
> (National Library of Malaysia, 2006, p. 4)

The survey also found that as Malaysians grew older, their interest in all types of reading material, declined. Additionally, the reading of newspapers, magazines and books was more prevalent in the urban areas while comics were the preferred reading material in rural areas (National Library of Malaysia, 2006). What these studies did not specify was the language of the reading materials. However, they brought to attention the view that Malaysians generally did not read much, a point confirmed by Datuk Seri Najib Tun Razak, the then deputy Prime Minister (*The Star Online*, 18 March 2007). He stated that Malaysians, especially Malays, did not read as most books were in English and this hindered their understanding. He suggested that this could have resulted from a language shift policy in Malaysia. Weak statistics on the literacy habits of Malaysians was worrying as the dissemination of information was rapid especially with the advent of communication technologies. Malaysians who, to start with, did

not have a reading culture, would have serious problems with access as a study carried out to investigate the enormity of the World Wide Web found that 80 per cent of the sites were in English (Lavoie & O'Neill, 1999). This is especially critical for learners in tertiary institutions where vast amounts of knowledge existed in English.

Furthermore, it was hoped that with literacy, Malaysians would move towards critical literacy. This would be in line with the then Prime Minister, Datuk Seri Abdullah Ahmad Badawi's call for schools to produce learners who were not only literate but who could think creatively and critically (*The Star Online*, 17 January, 2007). Kellner and Share (2005) suggested that critical literacy allowed people to take control of their lives, form their own interpretations of the world, design, construct and make changes to the present conditions of their society and culture. Cope (2005) stated that critical literacy replaced the action of simply reading from the text, whether print or screen, to that of reading from the society. Thus, for Cope a text was located in the norms and cultures of society. The practice of critical literacy encouraged the reader to question the existence of the text, the writer's intention, as well as who it benefited. The reader took alternative positions in reading a text which allowed the criticism of it from the point of view of his or her own society and culture (Luke and Freebody, 1997). Lankshear and McLaren (1993) expanded on Freire's 'Banking Pedagogy' to argue that a teacher-directed classroom produced only passive recipients who failed to connect with the learning practices. Thus, classroom texts became meaningless and classroom discourses produced the story-teller and the passive listeners. Lankshear and McLaren (1993) agreed that this kind of instruction only managed to produce graduates who were passive acceptors without any response of their own to the activities that were unfolding around them in the work community.

Discussion about English language proficiency also raises another concept that seems relevant to the context of English language learning. 'Competence' is viewed by many language acquisition theorists as the key criterion level for language performance. It can be deduced that an individual's proficiency in the language is determined by their level of competence. Scholars identify 'competence' by various terms that are in line with the views of the different theorists who discuss it. The next section defines how scholars perceive 'competence'.

2.4 Competence

'Competence' is variously defined by different scholars. Saussure (1959) used the terms '*langue*' and '*parole*' to describe the language abilities of a person. For Saussure, '*langue*' was the combined linguistic knowledge retained by learners and '*parole*' was their ability to produce this knowledge. Chomsky (1965) translated 'langue' as 'competence' and 'parole' as 'performance'. For Chomsky, competence was unanalysed knowledge that provided the basis for language use while performance indicated its actual use (in Dunworth, 2001, Brown, 1987). Anderson (1991) used the terms 'declarative' and 'procedural' knowledge to suggest similar concepts. According to Anderson, declarative knowledge was static data in a learner's memory which was usually declared verbally and procedural knowledge was what the learner knew how to do or dynamic data in the memory.

Hymes (1972 cited in Balderrama and Diaz-Rico (2006) further developed this concept of 'competence'. Hymes integrated the linguistic as well as socio-cultural aspects of language. For Hymes, a language user who was competent was someone who was able to communicate, interpret as well as collaborate, to produce meaning. Therefore, a competent speaker is able to employ the appropriate linguistic knowledge in appropriate contexts.

Competence in communication was broken down by Canales (1994) to encompass grammatical competence (sentence formation and vocabulary), sociolinguistic competence (use of language in different contexts), discourse competence (ability to create meaningful spoken and written language) and strategic competence (using language to enhance communication) (Balderrama and Diaz-Rico, 2006).

Published writings seem to highlight an inability to clearly distinguishing the differences between 'proficiency' and 'competency'. The diversity of models and theories which have evolved over the years seem to indicate that at times proficiency and competency are used interchangeably and at other times, to denote different things. North (2000) advocated that this issue of not being able to make clearly a distinction between the two concepts could be overcome if the term 'communicative language proficiency' was used. However, North (2000, p. 10) also implied that this would still not solve the problem as both "proficiency and competency are complex subjects related to the distinction of theoretical and operational models". It can be deduced that most researchers agree that proficiency is a part of competence and sometimes is used as an umbrella term. They also agree that proficiency

emphasises the competency or performance aspect and is applicable to the ability to applying knowledge in specific contexts (Ingram, 1985; North, 2000; Taylor, 1988; Vollmer, 1981). However, Iyldyz (2007, p. 9) argued that a clearly discriminated distinction between what constituted proficiency and how it could be assessed, was still unavailable, and that this emphasized that proficiency tests were "an important field for L2 education: as we teach we think about measuring the progress of our students and monitoring their success" (2007, p. 9). Language proficiency tests provided multi-dimensional diagnostic information for the purposes of evaluation in educational programs (Iyldyz, 2007). This discussion can be surmised to mean that competence and proficiency are interrelated. However, in the context of the present research study, the term 'proficiency' is employed to refer to the ability to use the four language skills of listening, speaking, reading and writing in an academic setting. Hence, the focus of this research study is the development of English language proficiency.

Learners' language ability is influenced by competence as well as proficiency, and for effective language functioning, both these elements need to work together. Both literacy and competence are components of language proficiency. Literacy, whether academic or otherwise, encompasses the ability to listen, speak, read and write different types of texts (print as well as screen) and have the ability to produce new content or information from them. This ability can be classified into different levels of proficiency. A proficient learner does not only have an underlying system to recognize how language operates in different contexts (print or screen), but also how to use this information appropriately to produce the type of genres required. A proper discussion about English language proficiency cannot unfold without reference to literacy and competence. With regard to English language proficiency, besides the need to have linguistic skills in English, learners also need to have skills in sociolinguistics as well as strategies to enhance and overcome communication breakdown. If one is lacking, it affects the other. It is clear from research that the task of learning a language is complex. Learners not only have to equip themselves with the linguistic skills of the language involved, but also other contextualising socio-cultural information as well.

For students who come to learn in tertiary institutions without having had the opportunity to become proficient in the language, it is especially difficult to be competent as they are faced with additional problems which they have to overcome in order to succeed.

Research had shown that it was more difficult for learners to learn to speak languages or acquire authentic control of phonology or the sound system of a language after puberty (Hall, 2001; Peregoy & Boyle, 2005). Additionally, adult learners can be overwhelmed by the complexity of the language learning task and might give up quickly compared to a younger learner. Self-consciousness and inhibition might be some of the reasons why adult learners do not take the necessary risks that are required of them in the language learning task, in order to improve. Another factor that could inhibit the learning process was attitudes towards learning (Giridharan & Enriquez, 2002). Some learners might not see the need to learn a second language and thus feel pressured to do so (Gill, 2005). This might result in negative reactions toward attaining proficiency in the language (Emmitt, Pollock & Komesaroff, 2002). All of these factors may be typical of the Communicative English One (CE1) course participants. It is probable that one or more of these factors influence the participants' English language proficiency development. This research study is then especially important as the findings are likely to be beneficial for informing course instructors of proficiency programs in Malaysia.

Subsequently, besides identifying a definition of proficiency that complements both the teaching and learning process as well as the learners' lifeworlds, it is also important to examine if courses meet learners' needs and expectations. A mismatch between course, curriculum and learners' needs is likely to result in poor learning outcomes. Learners enrol for courses in tertiary institutions for various reasons and may or may not share common goals. However, for the duration of the course they are expected to share a collective identity and this may affect learning. Thus a needs analysis must be carried out before courses are designed so that the views of stakeholders are taken into consideration. The next section of this discussion considers why needs analysis is important in the context of this research study as well as in providing curricula and methods for optimising learning.

2.5 Needs Analysis

According to previous research, the effectiveness of an educational program is dependent on "planning, implementation, evaluation and change" (Burgess & Owens, 2003, p. 3). For this process to unfold successfully, a needs analysis becomes paramount. Needs analysis is defined as a systematic set of procedures for identifying or the gathering of specific knowledge regarding learner needs and the analysis of this information so as to achieve

departmental goals (Burgess and Owen, 2003; Casper, 2003; Kikuchi, 2004; Xiao, 2003). Thus some scholars have argued that a needs analysis should be the initial step in designing a course. The views of the most important stakeholders clearly should be taken into consideration when planning or implementing courses as failure to do so can result in a mismatch between course objectives and learning outcomes.

A review of previous research highlights the existence of what scholars describe as traditional needs assessment as well as the more contemporary analysis of needs. Contemporary needs analysis is advocated by researchers who believe that the traditional system does not resolve certain injustices that learners face due to such things as policy implementation or budget cuts. Leki (2002) categorized herself with other researchers such as Swales (1990), Carson et al. (1992) and Johns (1997) in the traditional needs analysis school. She perceived that the traditionalists practised a very constructive approach to language teaching in that they incorporated learners' views of their own needs in the teaching and learning process. Benesch (1996), who practised a contemporary approach to language teaching, criticized the traditional needs analysis perspective by arguing that needs assessment from the traditionalist perspective did not really cater for learners, but was biased towards those who were conducting the assessment. She stressed that budget cuts in institutions often contributed to learners losing out with regard to lecture hours. A traditional needs analysis, according to Benesch, might overcome this with suggestions for extra hours of class time, but this did not necessarily consider the problems that learners had to face. Hence, she argued for a critical needs analysis that would go to the crux of an issue as well as address the politics of the institution. Her research found that both the traditional and critical needs analyses were popular among researchers (Benesch, 1996). The type of assessment employed is clearly influenced by who is asking the questions and how the answers are going to be analysed, as well as for what purposes.

With reference to a needs analysis model, research had suggested that Munby's *Communicative Needs Processor* (1978) was a popular choice among scholars when it was first introduced until it was criticised for failing to address various issues with regard to language teaching. The central theme of Munby's Needs Analysis model was "the language user's competence and its relation to knowledge and communicative competence" (Munby, 1978, p. 6). Munby's model considered two levels. First he outlined a prior level that

investigated factors such as participants' personal information with regard to their identity and language needs. At this level too, the model identified the learner's future and present goals for which the target language would be used. Additionally Munby also advocated identifying the constraints that a learner experienced in communication. The posterior level examined aspects such as dialect, target level, communicative event and communicative key (Munby, 1978). Although, his work was criticised by scholars for not addressing the heterogeneous make-up of the language learning classroom or methodological and implementation problems, Hutchinson and Waters (1987) appreciated Munby's research as "a highly detailed set of procedures for discovering target needs" (p. 54). Munby's work became a catalyst for Hutchinson and Waters' own needs analysis model.

Needs were classified by Hutchinson and Waters (1987) into target needs and learning needs. 'Target needs' were made up of necessities, lacks and wants. 'Necessity' was the knowledge that individuals were required to hold in order to function in a target situation. 'Lacks' consisted of the actual level and potential level of proficiency. 'Wants' could be described as how learners perceived their needs. Hutchinson and Waters used the label 'learning needs' as a general term encompassing all factors that influenced language learning, including attitude and motivation. They also argued that "the needs, potential and constraints of the learning situation must be taken into account" (1978, p. 61) if the process of needs assessment was to be beneficial. Moreover, Hutchinson and Waters suggested that a needs analysis to ascertain both the target and learning needs could be best carried out through the administration of questionnaires, interviews and by document analysis (Hutchinson and Waters, 1987).

Brindley (1984) saw needs analysis as acknowledging the affective and cognitive variables that affected learning, such as attitudes, motivation, awareness, personality, want, expectations and learning styles. Brindley also discussed 'objective needs analysis' targeted at collecting information in relation to setting goals for language content as well as 'subject needs analysis' that emphasized the collection of information about learners.

2.6 Previous Research on Needs Analysis

Various studies have been conducted on needs analysis. What these studies have shown was that there was a disparity between what students perceived they needed from language courses

and what administrators assumed that learners needed to know at outcomes when designing courses. Burgess and Owens (2003) conducted a needs analysis study for the purpose of setting priorities and making decisions about the Centre for Academic Development and Study Skills (CADS) courses in order to improve content delivery and facilitate the allocation of resources within the program. Data were collected through a questionnaire that contained 37 items divided into four categories comprising demographic information, overall skills levels, delivery of instruction and student workload. It was found that students' needs did not match either instruction or workload.

In another study carried out by a researcher in the Department of English at the Aoyama Gakuin University in Tokyo, an assessment of learner needs, was conducted for students enrolled in the Integrated English (IE) listening program (Kikuchi, 2004). It was reported that 585 students participated in this study. Two questionnaires were used to obtain information on the following themes: target tasks, problems, priorities, abilities, attitudes and solutions. The study also collected data through semi-structured interviews and observations. The researchers found that the program coordinators, teachers and students' views about what was perceived as the learners' target tasks appeared to conflict. According to the researchers, this disparity between the important stakeholders is likely to result in the daunting task of revamping the program (Kikuchi, 2004).

In an empirical study reported by Xiao (2003), a needs analysis was conducted to gain "insightful information on learners' needs and preferences as input to syllabus and materials planning, lesson planning and classroom instructional practice" (p. 76). The respondents of this study were 210 English major students in a multi-faculty university in North China. A 58-item questionnaire was used to gather information on the needs of learners. The questionnaire was divided into themes, including students' attitudes towards: (a) group work in class, speaking out in class, teacher-centred approach, second language acquisition in class, communicative activities in class, non-communicative activities in class, compensation strategies, social strategies, authority in class, (b) nature and strength of motivation among students, (c) culture learning in EFL, and (d) major difficulties encountered in the students' learning process. The researcher found that the respondents in this study were both deficient in major aspects of language competence and not content with their current linguistic competence.

Most studies in this field reported some kind of deficiency in the implementation of the course, methods employed, learner preferences and abilities as well as course administrators' perceptions. What these studies emphasised was that needs analysis was extremely important as a systematic way of collecting information about the teaching and learning process as well as using this information to influence changes in curriculum design (Bachman & Palmer, 1989). Luck et al. (2004) argued in their paper with regard to identifying various perceptions of all the stakeholders in a learning institution, that different individuals within the same organization might have contradicting views of the teaching and learning process. They added that these conflicting views might result in a serious strain on institutional goals and aspirations. The review of literature in this section clearly emphasises the importance of conducting a needs assessment prior to the design and implementation of courses.

Xiao (2003) made an interesting and pertinent observation regarding the necessity for needs analysis. She maintained that even though countries around the world had adopted a communicative approach (CA) to language teaching, the accurate use of its principles were rare in classrooms as teachers often employed a structural approach. Xiao claimed that if the CA was in actual fact utilized, then learners should be consulted on their "needs for learning the language, their preferred learning styles, their beliefs about language learning or their preferred activity types" (Xiao, 2003, p. 75). She further emphasized that this was especially critical as the proponents of the CA advocated a learner-centred approach. Xiao's observation is especially applicable to the Malaysian research setting. The *Kurikulum Baru Sekolah Menegah (*or KBSM as it is commonly known) discussed in the previous chapter was grounded in the CA. Most importantly, with regard to the setting of the current research, the course being explored in this study is aptly named Communicative English One. However, there appears to be no evidence that a needs analysis was conducted before or since its inception in 1997. Even when the teaching module was revamped in 2006, a needs assessment was not undertaken. The new learning module was designed on the basis that the existing one was full of errors, non-communicative and not well-organised. No survey was carried out in the faculty and neither were there any observations of the teaching and learning processes in CE1 classrooms. Students were not interviewed regarding their needs or challenges faced in the CE1 course (Nallaya, 2006). Thus, the views of the most important

stakeholders, namely, the students, were not taken into consideration in the designing of the course.

This can be one of the contributing factors as to why the students enrolled in the CE1 found the course a major challenge. It is argued that the English language proficiency problems faced by CE1 learners as well as their learning difficulties can be traced to the absence of a needs assessment prior to the design of the course in particular, and more generally the English language instruction that they received in secondary school. Although little can be done about the language instruction experienced by these learners prior to their enrolment at UPSI, it is never too late to address the shortcomings of the UPSI's language program. Hence a needs analysis questionnaire must be administered to respondents of this study at the beginning of their CE1 course. Although no survey can successfully ask all the questions that could be considered desirable, it is imperative in this research study to include an adequate representation of the types of answers that are needed for a revision of the curriculum.

The discussion thus far has emphasized two critical issues which contribute significantly to the ultimate achievement in language learning of students in a university. Moreover, the discussion of previous studies, unambiguously finds that the process of acquiring another language is by no means a simple feat. Many variables influence the outcomes. Hence, it is the educators' responsibility to devise both the means and the ways to make the learning processes as uncomplicated as possible, enjoyable and highly motivating. One approach could be to introduce the learners' lifeworlds into the classroom.

Studies have shown that technology and more specifically multimodal texts form a big part of learners' lifeworlds in recent years (Alvermann, 2001; Fishkeller, 2002; Luke, 1997). Children and adults engage in a diverse range of textual material in their everyday lives and their environment brims with multimodal texts. Previous research studies had found that learners engaged with the rich experience of the semiotic world around them (Kress, 2000). Street signs, billboards, television commercials, computer programs and printed materials were texts that they saw around them and interpreted daily (Emmitt, Pollock & Komesaroff, 2004). It is possible that these texts can facilitate the learning of the English language as they are familiar to the learners' lifeworlds, non-threatening and socially situated, and hence are

able to make the learning of the English language more meaningful. In short, language learning and teaching that encompasses a variety of processes that involve listening, speaking, reading and writing, as well as academic discourse and multimodal academic contexts can result in better learning outcomes for all students, particularly those who have low English language proficiency.

2.7 Summary

This chapter begins with a discussion on English language proficiency with regard to previous research studies. Published writings raise various pertinent issues with regard to the acquisition of English language proficiency. The most important argument identifies the need for a clear definition of 'proficiency'. Linguists argue that without comprehensive standards against which proficiency can be measured, it is difficult to arrive at a succinct and workable definition of 'proficiency'. Researchers also claim that there is a significant relationship between oral proficiency (BICS) and academic proficiency (CALP), and that performance in one is likely to influence outcomes in the other. Consequently, most researchers agree that a proficient individual is someone who is able to use the four skills of listening, speaking, reading and writing competently in various context-specific situations. In an academic setting, proficiency is generally assessed in terms of the four macro skills and learners have no choice but to master them in order to be regarded as proficient.

The chapter also briefly refers to language proficiency scales that are used by various language teaching and learning, governing bodies around the world with reference to Appendix 2.1. Language proficiency scales enable transparency in educational systems as well as emphasize and describe what a language learner is able to do. The discussion continues with two important ideas that need to be considered when discussing proficiency. Literacy and competency, although not similar, are ideas that play an important role with regard to the attainment of proficiency. There seems to be no clear definition of what 'literacy', is as it can mean different things in different contexts. Scholars argue that although in the past, an individual is considered to be literate based on his or her ability to read and write, this characterization is not applicable in the present context. With the advent of technology, it is generally argued that it is inappropriate to consider a person to be literate purely on their ability to read and write. Thus a literate student is not just someone who can merely listen, speak, read or write, but also able to use these skills for generating new

information and ideas in academic 'Discourse'. Hence, students who are literate are those who are able to use other forms of literacy such as information literacy, technological literacy and digital literacy with their language skills to produce new information.

Furthermore, in order to be literate, individuals not only need to have the underlying information with regard to linguistic systems and the rules of a language, they also need to be able to use this information appropriately as is required in an academic context. A learner's use of the English language is influenced by linguistic competence as well as performance and for effective language functioning, both these elements need to work together. With regard to English language proficiency, besides the need to have linguistic skills in English, learners also need to have skills in sociolinguistics, and discourse strategies to either enhance or overcome communicational breakdown. If any one of these is lacking, it affects the others.

The discussion in this chapter concludes with reference to previous research studies on needs analysis. Published writings indicate that the effectiveness of a study program is dependent on finding out what the stakeholders perceive as needs or interests, as well as their expectations of the program. A review of previous research studies with regard to needs analysis indicates that there is often a mismatch between the learners' preferences and interests, and the administrators' perceptions and implementation of courses.

Chapter Three

Technology and Multimodal Texts

Literacy practices today require the ability to read and write various semiotic codes such as icons, symbols, visuals, graphics, animation, audio and video. Furthermore, it is widely acknowledged that both technology and multimodal texts are now popular in learners' lifeworlds. Teachers who do not acknowledge these texts as part of the repertoire of textual materials in the classroom can make the language learning process less authentic as well as disengage learners' real life experiences from everyday classroom learning and teaching. The next section discusses issues that arise from previous research studies associated with the use of technology in teaching and learning.

3.1 Technology

Technology has been defined as "how people modify the natural world to suit their own purposes… the diverse collection of processes and knowledge that people use to extend human abilities and to satisfy human needs and wants" (Standards for Technological Literacy, 2007, p. 7). Warschauer and Meskill (2000) argued that technology had always been in existence in the teaching and learning process and technology employed to assist in the teaching and learning processes had been identified as 'instructional technology'. The National Assistive Technology Research Institute (2006, p. 2) defined 'instructional technology' in the following terms:

> a systematic way of designing, carrying out, and evaluating the total process of learning and teaching in terms of specific objectives, based on research in human learning and communication, and employing a combination of human and nonhuman resources to bring about more effective instruction.

Instructional technology encompassed conventional media (videotapes, computer-assisted instruction), hypermedia programs, CD-ROM and digital video discs, telecommunications as well as computer software systems (The National Assistive Technology Research Institute, 2006, p. 2). Information and Communication Technology (ICT) has also played a large role in instructional technology. The report on *ICT in PISA and Education Policy* (2006, p. 3) proposed that "ICT is an important part of policy agendas with an important implication for education...it can facilitate new forms of learning". The report, also suggested that it was crucial for young people to master ICT to prepare them for the future. Additionally, the report argued that everyone would "need to use ICT in many different ways in their adult

lives in order to participate fully in a modern society" (p. 8). The importance of using ICT as well as multimodal texts that were generated by these technologies, were further justified in the following statement.

> Successful use of ICT in schools can help students to develop the skills, more generally, that will be useful to them in their future academic and professional lives.
>
> (*ICT in PISA and Education Policy* (2006, p. 3)

Many studies conducted to explore the advantages of using technology in the realm of language teaching have reported positive findings (Wang, 2005). Moreover, Warschauer and Meskill (2000) argued that technology could be used to scaffold the language teaching and learning process whether an educator chose to use cognitive, sociocognitive or computer-mediated classroom approaches. Although technology was not without shortcomings, its benefits in language teaching were often seen as offsetting the disadvantages. Warschauer and Meskill (2000, p. 11) maintained that the main advantage of technology in language teaching was that "it helps prepare students for the kinds of cross-cultural communication which is increasingly required for success in academic, vocational or personal life". Shawcross (2004, p. 4) affirmed that technology at the centre of language teaching allowed for a "greater range of integrated activities, wider access to authentic materials as well as enabling a learning-living continuum". These studies provide evidence that technology in language teaching is generally considered in relation to ICT and is often seen as a tool for advancing the effectiveness of teaching and learning. Its advantages or disadvantages are viewed from the perspective of its distributive and interactive capabilities.

3.2 Information Technology

The National Assistive Technology Research Institute (2006, p. 2) asserted that

> ICT provides access to knowledge and resources on a wide range of topics. The Internet, and its World Wide Web component, is the most prominent example of information technology. The Educational Resources Information Centre (ERIC) is another example. The ERIC system enables people to search and locate much of the world's educational literature on a given topic.

ICT has the capacity to multiply the audience for a message and vice versa. However, research also highlights the fact that although ICT is able to do this, it does not guarantee that the users will interpret or learn the message in the way intended. The convergence of information technologies, especially in language teaching, enables easy and efficient

communication even though the particular community of language users is widely dispersed (*ICT in PISA and Education Policy*, 2006; Wang, 2005; Warschauer and Meskill, 2000).

Acknowledging a more diverse semiotic landscape in an academic language learning and teaching 'Discourse' may "open up new meaning potential which may bring academic conversation closer to a range of people from different socioeconomic backgrounds and literacy practices" (Thesen, 2001, p. 135). Key players in the academic fields of some countries appear to embrace this initiative. Jones (2003, p. 1) in his paper titled 'ICT and Future Teachers: Are We Preparing for E-learning?' suggested that it was now common for teacher administration bodies to insist that "all newly qualified teachers are able to use a range of ICT applications for teaching and administration". Jones also highlighted that the Australian Government had published "several papers containing plans and strategies for bringing schools and teachers into the information age" (p. 1). The Australian Department of Education, Training and Youth Affairs (DETYA) also published a report entitled '*Raising the Standards*'. The report included a proposal for the development of the information and communication technology (ICT) competence of teachers, and recommended the following strategies:

> (a) introduce initiatives into teacher pre-service education to improve the ICT competence; and
>
> (b) develop teacher competency standards in using ICT in curriculum practice and incorporate teacher ICT standards into human resource management within education authorities and individual schools, including recruitment and promotion practices.
>
> (DETYA, 2000, p. 52)

In another paper published by the Australian Department of Education, Science and Training (DEST) entitled '*Learning for the Knowledge Society: A training and action plan for the information economy*', the following proposals were advanced:

> For teacher education institutions to be able to train and graduate beginning teachers who have the necessary knowledge, skills, understandings and attitudes to make effective use of ICT in their teaching practice, a number of capabilities need to be in place. These can be categorised as,
>
> > (a) leadership and vision in the use of ICT, (b) infrastructure providing appropriate access and technical support, (c) curriculum or programs that integrate the use of ICT, (d) partnerships with schools to provide appropriate professional experience for pre-service teachers, and (e) competence in and understanding of the effective use of ICT for the teaching and learning by teacher education staff.
> >
> > (DEST, 2002, p.14)

Likewise, the implementation of ICT in schools had become fundamental to Malaysia's aim of becoming a fully IT literate nation as affirmed in Vision 2020 by Tun Mahathir Mohammad, the then Prime Minister. The Multimedia Super Corridor or MSC, as it is popularly known, has become important in achieving this vision through its seven flagship applications which are expected to have an impact on every Malaysian's ICT knowledge and skill. In the summary of a project carried out between March and October 2006 in support of the International Institute for Communication and Development, the following statement was made in order to reiterate the Malaysian Government's initiative to embrace the globalisation of ICT.

> Malaysia recognises that the transformation of its education system is fundamental to achieving its objectives. The Ministry of Education, with the participation of non-governmental agencies, is focusing on the development of new media for use as educational, organisational and partnership-building tools, and as a means for bridging the country's digital divide and empowering learners. Due to its belief that ICT can revolutionise education and learning, the Ministry plans to integrate ICT into education on a fundamental level, incorporating systems to facilitate management, information gathering, access, and various forms of communication.
>
> (*ICT for Development*, 2002, p. 1)

The discussion above emphasises the thrust of this research study. ICT in general and multimodal texts more specifically form the basis of most education policies today. Knowledge, understanding and skill in ICT appear to be the pre-requisites expected of pre-service teachers. Reforms in the curriculum for the integration of ICT in every day teaching and learning are strongly recommended by policy makers. It is clear from the papers published by governing education bodies around the world that ICT is seen as fundamental to future development. This current investigation then becomes especially significant.

This proposed research study acknowledges that proficiency in the language skills of listening, speaking, reading and writing is important in the academic 'Discourse' community and that learners in proficiency courses such as the CE1 have to be able to read and write in academic language as required by the 'Discourse' community. Nevertheless, it is not argued that the print texts in a course need to be replaced with technology-based, multimodal texts. However, the inclusion of these texts, which are already a part of learners' lifeworlds, may facilitate the language learning process as,

> [since] literacy is increasingly thought of as participation in social practices, rather than a neutral psychological skill, it becomes important to recognise the practices and values students may bring to school.
>
> (Emmitt, Pollock & Komesaroff, 2004, p. 210)

3.3 Information Technology in the Malaysian Education System

The view of policy makers and scholars in regard to using technology in the classroom to enhance the teaching and learning process is strongly supported by the Malaysian education system. This is obvious in the many efforts and steps taken by the Malaysian Government to incorporate technology into the education system from as early as the 1970s when the Educational Technology Division was established to improve the quality of education. Since then, many other programs have been implemented. Malaysia sees herself as a nation that is keen on achieving the status of a developed nation by 2020. In order for this to happen, various initiatives have been launched so that Malaysians, particularly students, are equipped with the knowledge, skills and attitudes to face the challenges of a technological information era. The Ministry of Education in Malaysia has pinpointed three policies that form the foundations for ICT in Education:

> (a) ICT will be used to reduce the digital divide between the country's schools enabling ICT access for all students, (b) ICT will be used as teaching and learning tools in education, taught as an independent subject and integrated into others, (c) and ICT will be used to enhance efficiency, effectiveness and productivity of management in education, through the automation and mechanisation of work processes.
>
> (*ICT for Development*, 2002, p. 1)

The Malaysian Government's initiative to achieve the ICT in Education objectives are:

> (a) preparing appropriate ICT equipment and infrastructure for all schools, (b) introducing ICT curriculum and support for ICT integration into general teaching and learning, (c) upgrading the ICT skills and knowledge of both teachers and students, (d) increasing ICT use in educational management, and (e) upgrading ICT maintenance or management in educational institutions.
>
> (*ICT for Development*, 2002, p. 1)

All the above-mentioned strategies are expected to be executed through the various endeavours undertaken by both government and non-government agencies. The following are some of the projects that have been implemented in Malaysia in her move towards achieving Vision 2020, that is, towards becoming a fully developed and IT literate nation.

> ***The Malaysian Smart School****:* Launched in 1997 as a pilot project involving approximately 90 schools throughout the country, Smart Schools are intended to nurture the development of a knowledge-based work force by moving away from memory-based learning towards education based on equitable access, stimulation of creativity and thinking, and support for individual learning. The main components of the Smart School Integrated Solution are a computerised Smart School Management System; Browser-based Teaching-Learning Materials; Help Desk support services and specialised support services; and a Smart School Technology Infrastructure.
>
> ***Internet Usage****:* The Ministry of Education developed the MySchoolNet website, which provides links to enable students and teachers easier access to educational information, in order to enhance ICT use in education. Interactive communication between Malaysian students and those in other countries was also encouraged and supported.
>
> ***ICT Training in Schools****:* The Ministry of Education used the cascade model, in which suitable individuals underwent training and then passed this training on to other trainers who, in turn, trained school colleagues, in order to disseminate ICT knowledge throughout the school system. Various agencies within the ministry were responsible for ICT training, and all teachers studying at the Teacher Training colleges were required to undertake education in ICT.
>
> ***The Computerisation Program in Schools****:* This program, implemented in three stages, was intended to reduce the country's digital divide by introducing ICT and promoting ICT literacy in the greatest number of schools possible. A computer lab is built for each of the schools, which was then upgraded at a later date to Smart Schools.
>
> ***The Electronic Book Project:*** This pilot project explored the benefits of replacing conventional textbooks with electronic, or e-books, and how they might contribute to improvements in learning and teaching. Upon conclusion of the pilot after a five-month period, findings determined that e-books engaged students more actively in learning and reading, and also improved technology and computer knowledge.
>
> ***Penang E-Learning Community Project:*** Started in 1997 and managed primarily by the Science University of Malaysia, this state-initiated project spearheaded the development of web-based services, a web presence, and collaborative web-based tools for the purpose of providing needed information to the educational community within the state. Such services as web hosting, email, and electronic discussions were provided, and the E-Learning website hosted the homepages of a minimum of 100 schools.
>
> (ICT for Development, 2002, p. 3)

The endeavours undertaken by the Malaysian Government to integrate technology into the teaching and learning process suggests that Malaysia acknowledges the rapid spread of communication technology in the twenty-first century. The teaching and learning process has moved away from the traditional so-called 'chalk and talk' method to one that is

technologically oriented. Therefore, books are not the only form of resource and reference materials in the classrooms. The classroom environment is made more multimodal in nature. Tertiary institutions too need to emulate this. The International Society for Technology in Education (ISTE) (2007) has listed the National Educational Technology Standards and performance indicators for both students and teachers in line with the global spread of information and communication technology (refer to Appendix 3.1 and 3.2). After deliberating on the various endeavours, strategies and plans undertaken by governments of various countries, it cannot be doubted that multimodal technologies and texts play an important role in education. Using technology and more specifically multimodal texts, to teach English language proficiency courses can help learning to become more meaningful for all learners.

3.4 Multimodal Texts

Scholarship and studies in this field confirm the existence of multimodal texts in contemporary society as well as in the lives of students. For many students, multimodal texts play a dominant role in communicating information and knowledge as well as other values and virtues. Students spend many hours of their lives outside of the classroom, reading and writing multimodal texts (Nallaya, 2006). Students write emails, produce power point presentations, watch videos, visit web sites and chat rooms, and send text messages with their cell phones in English every day (Nallaya, 2006). As a result, they are not overcome by inhibitions or lack the skills to read and write in English inside or outside the classroom. It seems likely that these activities greatly facilitate the development of their use of the English language. Furthermore, many of the multimodal texts commonly represent their lifeworlds, societies and culture. This enables students to make meaningful connections between literacy and their lives. The inclusion of multimodal texts in the repertoire of texts in the CE1 course can reduce the disjuncture between students' lifeworlds and their language learning experience in the classroom. This is where this study is grounded as it acknowledges that learners are inundated with multimodal texts in their everyday life. This study is also based on the premise that, with the existence of various types of multimodal texts in today's global communicational technology, formal language is not the only means for making meaning (Kress, 2003; New London Group, 1996).

With reference to this research study, undergraduates who have problems with the English print texts that are used in the English proficiency classrooms can find a solution to

their learning difficulty through the inclusion of multimodal texts in the repertoire of texts they read and write. The semiotic codes (symbols in the form of signs, icons and indexes that represent meaning for words) (Suhor, 1991) that are present in many of these texts may facilitate understanding. Besides this, these students may be motivated to read and write multimodal texts as they are already part of their lifeworlds. As the text modes are familiar to them, it is possible that the students perceive them as non-threatening. Furthermore, students can read, view or listen, as well as write and produce the texts outside classroom time and, indeed anywhere they choose, at their own pace and without any stress of needing to keep up with the rest of the class. The multiple dimensions of multimodal texts can also facilitate cross-referencing of information.

LEARN (2007, p. 1) has stated that the term 'multimodal' refers to "five modes of meaning-making: linguistic, visual, gestural, spatial and audio, working together to create texts. These hybrid combinations form multimodal texts". LEARN also suggests that all texts are multimodal as

> different modes of meaning interact with each other – words and images are organised on a page to create a newspaper article; images, sounds, and gestures are integrated to create a play or television program; words are spoken in soft voice or typed as small font to convey a particular meaning; a photograph is tightly framed to create a feeling of confinement.

The Office for Curriculum, Leadership and Learning, Tasmania (2002), defined texts as "any communication whether spoken, written or visual, involving language" and that when it is declared in English, the meaning encompassed a broad range such as "conversations, speeches, letters, novels, plays, feature films and multi-media texts" (p. 1). Walsh (2004, p.1) defined multimodal texts as

> those texts that have more than one 'mode' so that meaning is communicated through a synchronisation of modes…they may incorporate spoken or written language, still or moving images…be produced on paper or electronic screen and may incorporate sound…multimodal texts that students commonly encounter in their educational environment in print form are picture books, information books, newspapers and magazines…in non-print form are film, video and, increasingly, those texts through the electronic screen such as email, the internet and digital media such as CD ROMs or DVDs.

Walsh succinctly depicts different types of multimodal texts as shown in Figure 3.1.

Figure 3.1. Forms of Multimodal Text
Source: Walsh (2006, p. 1)

Existing literature in this field suggest that various studies have been carried out to investigate the use of multimodal texts in language learning environments in both native and ESL contexts (Clancy & Lowrie, 2004; Eshet-Alkalai, 2004; Falk-Ross, 2002; Lacina, 2005; Stein, 2000). Drawing from these studies, it is clear that most researchers agree that there is a need for many forms of literacies in the classroom as texts today are multimodal in nature. Moreover, research findings support that multimodal texts are able to enhance the English language (listening, speaking, reading and writing) abilities of students. The findings of these studies suggest that the characteristics of multimodal texts encourage and aid reading comprehension as well as writing because learners use different semiotic codes to make meaning. In addition, research also suggests that texts do not exist in isolation and that learners derive meaning by depending on the inter-textuality elements, present with it (Smolin & Lawless, 2003).

Additionally, research related to this discipline clearly indicates that youth regularly utilise or at least have access to one or more of the multimodal texts shown in Figure 3.1. They read, view or listen to multimodal texts such as picture books and information texts, CD-ROM narratives and factual texts, E-books, web-sites, web quests, book raps, games and DVDs, hybrid texts, e-mails, discussion boards, chat rooms and i-pods. Furthermore, they write and produce e-mails or in discussion boards, power point slides, digital photographs,

video clips, blogs, wikis, MUDS, videos and video editing, animation, movies, E-books and sms texts. It is possible that Malaysian youth read, view or listen to these texts and/or write and produce them in English. Consequently, it is also possible that these texts are used for both learning in the classroom and for every day communication. The types of multimodal technologies and texts youth use or have access to, as well as the frequency they use them for learning and for every day communication, can be associated with English language proficiency development. Identifying the association between types of multimodal technologies and texts, frequency of use for learning and every day communication as well as learners' perception of proficiency when using English for these activities, can provide valuable information towards overcoming the language proficiency problems of ESL learners.

Multimodal texts play a significant role in language education with the existence of new information and communication technologies. Meaning is communicated in multiple manners: employing more traditional written language forms is no longer sufficient (Kalantzis & Cope, 1997). Additionally, scholars state that with the existence of these communication technologies, the individual experiences change in students' working, public as well as private lives. Communication now encompasses icons, graphics, audio as well as screen, thus requiring multimodal literacy. Failure on the part of an individual to participate successfully in this type of communication marginalises them, especially in the workforce. The implication of this for education is that schools need to provide learners with the skills, knowledge and understanding of how to use these new communicational technologies effectively and efficiently. Both the curriculum and instructors must prepare learners for the workforce by ensuring that they are technologically literate. The onus is on teachers, especially to incorporate ICT in their teaching and learning process. Knezek aptly stated:

> teachers must become comfortable as co-learners with their students and with colleagues around the world. Today it is less about *staying ahead [emphasis in the original]* and more about *moving ahead [emphasis in the original]* as members of dynamic learning communities. The digital-age teaching professional must demonstrate a vision of technology infusion and develop the technology skills of others. These are the hallmarks of the new education leader.
>
> (Knezek, 2008, p. 3)

Hence, multimodal literacy must take precedence in the classroom as language learners need to be trained to listen to, read and write these texts. Furthermore, research suggests that all modes of communication are interdependent on one another and that the

multimodal nature of communication has existed since the times when maps and diagrams were used to explain a concept better (NCTE Guideline, 2004). Thus the reluctance of teachers to exploit multimodal texts in the classroom, preferring instead traditional print texts is ungrounded.

Students who are challenged by the attainment of English language proficiency can overcome the problem if they find learning and living more meaningful. Research publications have extensively emphasized that multimodal texts play significant roles in learners' lives. Learners today use and produce all types of multimodal texts. It is highly likely that these texts can contribute to the development of English language proficiency. It is hence the aim of this study to explore, among other things, the impact of multimodal texts on the development of English language proficiency.

3.4.1 Multimodal Technologies Accessible to Students in Malaysia

Various studies conducted in Malaysia report that students have access to many types of multimodal technologies both in school and at home. Wim Veen (2002) and Wim Veen, et al. (2003) described Malaysian youth as "e-generation or e-geners or n-geners". Alias Daud et al. (1996, p. 2) supported this assertion by suggesting that Malaysian youth

> use mobile phones and emails to communicate, are quite adept at using the internet and actively involved in online communities, skilful at downloading videos and music over to their computers and locating information from electronic or virtual libraries. Many 'e-geners' self-taught themselves, to build their own website.

Additionally, various projects implemented by both government and non-government agencies in Malaysia, in becoming a fully developed and IT literate nation, ensure that students have access to various types of multimodal technologies. Alias Daud et al. (1996, p. 2) reported that 97.3 per cent of Malaysians watched television at home and that there was high computer ownership, but low internet use. However, none of these studies have identified the types of multimodal technologies and texts that Malaysian youth have access to or utilise.

It is hence the aim of this research study to identify the types of multimodal technologies to which the targeted respondents have access. As it is impossible to list all the multimodal technologies and texts that are available, the researcher confines her consideration to those multimodal technologies that are more popular among youth in Malaysia and Singapore, such as computers, laptops, the internet, cell phones, television and DVD players.

3.5 Previous Research on Technology and Multimodal Texts

A study was conducted on 50 undergraduates in *Universiti Malaysia Sabah*, a public university in Malaysia, to investigate the effectiveness of using project-based learning incorporating the use of multimedia. A five-week unit plan was designed for the teaching of listening and speaking skills to 50 first-year Teaching English as a Second Language (TESL) students using Intel Teach (an interactive online teaching program). This was a course which included instructions on devising the unit plan, locating resources, creating student multimedia presentations, publications and support materials. The researchers found that the incorporation of project-based learning and multimedia in the teaching and learning process for tertiary learners was effective in that it connected theories with their actual application. The findings also showed that employing computer technology in education enabled learners to access information quickly and efficiently. The exercise, according to the researchers, proved to be enriching for the learners (Loh, 2007).

Another study was carried out in *Universiti Utara Malaysia* to examine the efficiency of the Internet Classroom Assistant (ICA) also known as NICENET, in the teaching of English. The survey investigated students' reactions towards the use of NICENET in facilitating the language learning process. The researchers found that the use of NICENET in the teaching and learning process reduced language learning barriers and increased students' motivation towards learning English. It was also found that NICENET was a useful tool for enhancing learners' writing abilities (Mohamed & Dzakaria, 2005).

In a study carried out by Thang and Bidmeshki (2004) on those first year undergraduates of the Faculty of Science and Technology, *Universiti Kebangsaan Malaysia*, enrolled in the English for Science and Technology (EST) compulsory course, the effectiveness of the online component of the course was investigated. The online component was designed to complement face-to-face lectures and provide an opportunity to increase the learners' command of vocabulary and IT skills. The researchers stated that the ultimate goal of the project was to create "awareness among the students on the vast opportunity for language learning available on the Internet and promote autonomous and lifelong language learning" (p.105). The findings showed that learners believed that the online English course helped them to equip themselves with the necessary reading and computer skills as well as providing a fun, entertaining and flexible environment in which to learn English.

Cavallaro and Krishnan (2007) from Nanyang Technological University in Singapore described a research study that they carried out using web-design projects in an English proficiency course. The course was offered to first year students or second year direct entry students who had obtained a diploma from the Polytechnics, to study for a Bachelors Degree in Engineering. The students were working in groups and each one of them had to submit an essay on a topic that he or she had chosen to investigate. The essay was the product of the group doing research and accessing relevant information from the internet and other sources. The findings, according to the researchers, demonstrated that, on the whole, the "project was successful in encouraging students and increasing their confidence in using English. The projects showed much creativity in both design and language use" (Cavallaro & Krishnan, 2007, pp. 140).

In a case study carried out to investigate teachers' use of computers in teaching English by researchers from the Faculty of Social Sciences and Humanities, at the *Universiti Kebangsaan Malaysia*, it was found that teachers rarely used computers as they were not adequately trained to use this technology in their teaching. The teachers also said that they were not very confident in utilising technology, because of their lack of ICT knowledge. In addition, the findings illustrated that the teachers also faced many challenges in the form of lack of infrastructural support. There was concern regarding the availability of both software and skilled technicians (Darus, 2008). This view contradicted the findings from the National Educational and Technology Standards and Performance Indicators for Teachers (2008) report which specified that teachers: (a) facilitated and inspired student learning and creativity; (b) designed and developed digital-age learning experiences and assessments; (c) modelled digital-age work and learning; (d) promoted and modelled digital citizenship and responsibility; and (e) engaged in professional growth and leadership (ISTE, 2008, p. 1).

Similar findings were obtained by Samuel and Abu Bakar (2006) in a study investigating the utilization and integration of ICT tools in promoting English language teaching and learning. The researchers found that a lack of infrastructure was one of the reasons for poor ICT integration. Lack of competency and confidence in ICT skills were other reasons. The findings demonstrated that schools with good ICT resources achieved better results in English compared to schools with poor ICT resources.

These research studies provide important ideas for the design of the present study from two perspectives. First, they illustrated that instructors of language courses in tertiary institutions employed ICT to teach English. The studies also found that the use of ICT did not come without problems. Generally however, researchers reported a marked improvement in the students' language learning behaviours. Second, the studies showed that teachers in schools were not competent enough to use ICT in language teaching. Thus they shied away from integrating ICT in the ESL classroom. If universities did not give precedence to equipping pre-service teachers with the necessary ICT skills while they were enrolled in their study programs, the efficient use of ICT in the classroom would fail. Furthermore, pre-service teachers would not be familiar with the multiplicity of texts that could be used in the language classroom to facilitate English language learning. This would disadvantage learners who had problems with traditional methods of teaching. Multimodal texts have also been found from research studies to be an alternative means of facilitating weak students' language acquisition. Additionally, employing just one approach in the language classroom might not acknowledge the fact that students employed different learning styles in the language learning classroom. Some students, especially those who had difficulty with English language proficiency, might require visuals, graphics, animation and sound to aid comprehension.

Overall, the review of literature found that little had been published in this field of research in the Malaysian context. The existing research findings illustrated that research workers in tertiary institutions, more than schools, favoured online or web-based projects to teach English. The computer and internet appeared to be popular features of the language learning classrooms in universities. This could be the result of the Malaysian Government's initiative for generating a technologically-literate workforce through the various programs and activities implemented in schools and tertiary institutions. Learning institutions had also been directed to integrate ICT into both the Science and English curricula. However, little research had been carried out on the usefulness of other types of multimodal texts such as movies, songs, cartoons, signboards and comics, in the development of English language proficiency. Previous research studies have demonstrated that the use of technology or multimodal texts contributed to the enhancement of the language learning behaviours of ESL students. Generally, students who participated in related studies displayed an overall confidence as well and creativity in language production. The findings suggested that there was also an improvement in students' language skills. Research studies also confirmed that the use of ICT in the language teaching classroom enabled rapid access to current information.

However, it must be acknowledged that the use of ICTs does not come without problems. There have been studies carried out on teachers' perceptions of the use of ICT in language classrooms. These studies have reported that without teacher expertise in the use of ICTs, infrastructural and technical support, as well as materials and equipment, there was little improvement in student outcomes even though language teaching was integrated with ICT. Furthermore, there might be instructors who were challenged technologically and might not be capable of fully exploiting the available technological resources in the classroom or language laboratories. It was noted, too, that not all students had access to computers outside of the learning institution and this might work negatively in the language learning process. Alternatively, not every student will react positively towards the use of technology or multimodal texts in the classroom as he or she might subscribe to a more traditional method of language learning.

On a positive note, however, most studies advocated the use of technology and multimodal texts in the ESL classroom. These texts appear to engage students in tasks and make language learning more meaningful and relatable. For ESL learners who are disadvantaged by their lack of proficiency, multimodal texts facilitate comprehension through its various semiotic codes. The opportunity to practise language outside the classroom in a less threatening environment also facilitates language acquisition. Technology and multimodal texts allow room for communication and collaboration. The central benefit of employing multimodal texts in the ESL classroom is that they are familiar to students and already play a major role in the learners' lifeworlds.

Based on all the arguments emphasized in this and the previous chapter, this research study is guided by the social constructivism theory as well as a 'modelling approach'. Learning is not viewed as an isolated, individualistic activity by the social constructivists. It is a socially constructed activity where learners are perceived as members who are situated and operating within society. Furthermore, learning is perceived, not as the behaviour of acquiring discrete items of knowledge, but as a process that interacts within a society and culture (Wilson, 2003). However, published writings indicate that there are many weaknesses in the social constructivism theory. Keeves (2002) argued that constructivist approaches often "distorted what is acceptable as knowledge in a world where what is accepted as knowledge is

growing at an extremely rapid pace". Keeves (2002, p. 114) asserted that a modelling approach to

> both learning and to the accumulation of knowledge is…necessary in so far as any models that are constructed must be tested for their coherence and adequacy with recognition that certainty and the so-called 'truth' of knowledge can never be fully established.

Consequently, the building of knowledge needs to be based on the testing of ideas and relationships, beyond the stage of merely discussing within groups. Thus the following section considers social constructivism with reference to existing theoretical perspectives. The discussion then describes what the 'modelling approach' is and why it is relevant in the context of learning English as a second language.

3.6 Theoretical Framework

Language learning in the past was first directed by the behaviourist tenets of learning where learners underwent an instructional process that was founded on "observation, copying, demonstration and reward or reinforcement" (Palinscar, 1998, p. 346). However linguists found that this form of language instruction did not contribute to the mastery of higher order thinking skills. This was the criticism of many cognitive theories from which the social constructivist theory was derived. Hirtle (1996) claimed that the term 'social construction' has its origin in Dewey's Pedagogic Creed. Dewey (1963) contended that one could not separate the psychological element from the social context in education as both were linked. Dewey (1963) saw education as the result of empowerment of an individual in a social situation.

According to social constructivists, what was learnt was very much dependent on where and how it was learnt. Constructivists argued that cognitive processing occurred when individuals communicated. When students' culture was appreciated and accepted, they would openly voice their views and opinions (Hirtle, 1996). Hence, communication occurred. Learning to use language took place through communication mediated through the language itself and its symbols or signs. Learning to use language for the social constructivist was both interactive and active in that learners needed to interact constantly with other sources of knowledge as well as reconstruct and regenerate the knowledge that was received (Wilson, 2003). Doolittle (1999) stressed that the defining principles of social constructivism were both the social nature of learning and the belief that learning by individuals was the result of social interaction and language usage. Thus the sharing of knowledge and interaction always

occurred within a social-cultural context resulting in learning that was bound to a specific time and place. Knowledge, however, must always be examined and tested against evidence obtained from the real world.

3.6.1 Social Constructivism

The strands of social constructivism were founded on the statement that thought and learning "are not just influenced by social factors but are social phenomena" (Palinscar, 1998, p. 349). Studies in this field found that interaction and collaboration between learners and their peers significantly contributed towards the language learning process. It was also argued that students mastered language learning behaviours better when teachers took on the role of facilitators rather than directors (Daiute & Dalton, 1993; Palinscar & Brown, 1984; Palinscar, 1986). These linguists shared the assumption that students, working in groups and drawing upon the combined ways in which knowledge could be organised through the sharing of collective memory that resulted from collaboration and interaction, stood to gain more success in language learning tasks (Palinscar, 1986).

Central to social constructivism was the concept of Vygotsky's Zone of Proximal Development (ZPD) (in Peregoy & Boyle, 2005). Scaffolding was defined as a process "of negotiated interaction in which experts first assess the learner's levels of competence and determine the types of assistance they need to accomplish a particular task" (Hall, 2001, p. 31). The theory also emphasized that linguistic, social and acquired knowledge were based on participation and apprenticeship in socio-cultural events and activities (Hall, 2001). Thus the learning and teaching process were centred on four principles and that

> learning is a social and collaborative activity; the Zone of Proximal Development would be the basis for lesson planning and implementation; learning should be meaningful and be rooted in learners' lifeworlds; and learners' previous knowledge as well as out-of-school experience should be related to school experience.
>
> (Maddux, Johnson & Willis, 1997, p. 25)

Wertsch (1991) classified these principles into the following themes: (a) individual development including higher mental functioning had its origins in social structures; and (b) human action, on both the social and individual planes was mediated by tools and signs – semiotics involving language of various systems such as art, drawings, graphics, and others. These two themes could be examined through genetic or developmental analysis.

Vygotsky's ZPD was consistent with social constructivist theory and has been regarded as an essential approach to overcoming learning difficulties (Doolittle, 1999; Hirtle, 1996; Palinscar, 1986). Vygotsky (1978) claimed that the relationship between learning and development needed to be discriminated into two levels, the actual and the potential levels of development. Actual levels were tasks that learners could perform or independently, whereas potential levels were what they could accomplish with assistance. Research had suggested that the ZPD was a better gauge of cognitive development and that fruitful communication was that which directed learning towards ZPD. It was Vygotsky's contention that any instruction that did not promote development in a learner was useless. Vygotsky also reiterated that all cognitive functions originated as social functions and that learning was not simply the "assimilation and accommodation of new knowledge by learners; it was the process by which learners were integrated into a knowledge community" (Teaching Guide for Graduate Student Instructors, 2005, p. 1).

In employing constructivist theory to language learning pedagogy, Doolittle (1999, pp. 4-7) suggested that scholars had outlined eight guiding principles:

> (a) learning should take place in authentic and real-world environments, (b) learning should involve social negotiation and mediation, (c) content and skills should be made relevant to the learner, (d) content and skills should be understood within the framework of the learner's prior knowledge, (e) learners should be assessed formatively, serving to inform future learning experiences, (f) learners should be encouraged to become self-regulatory, self-mediated and self-aware, (g) teachers serve primarily as guides and facilitators of learning, not instructors, and (h) teachers should provide for and encourage multiple perspectives and representations of content.

More practically, Hirtle (1996) recommended some suggestions for language teachers that could be implemented in the teaching and learning process that could shift learners from their actual level of development to their potential level as proposed by Vygotsky's ZPD:

> adding connections to the outside world through newspapers, TV and movies, drawing on learners home cultures, making connections with other classes and schools and in general bringing the world into the classroom; problematizing situations and concepts. A curriculum that asks students to gather examples of real language usage from family and friends problematizes the subject of usage rules, raising questions about what this term represents and the values it implies; redefining school literacy so that student texts become literature, expository writing becomes creative and public discourse becomes personal; sequencing curriculum to be responsive to student inquiry, to the questions that get raised, to things that get discovered in class, and to events outside school; formalizing learning by making explicit the method and process - including classroom organization and structures - as well as the content of classroom study; combining curricular elements and revising

> by re-seeing the old. We can revise the canon of works that we read, the place of oral texts coming from the community, the role of language study and the place of writing. (Hirtle, 1996, p. 92)

Incidentally, the principles that guide social constructivist theory become applicable in language learning classrooms and more specifically in second language learning contexts when teachers acknowledge the diversity of learner backgrounds, cultures, policy implementation and duly employ this information to facilitate the teaching and learning process. The social constructivist theoretical framework is used in this study of language learning because of its guiding principles that are considered in this section. The participants in this research setting are enrolled in an English language course that is a compulsory core university subject. In order to graduate, the participants are required to sit for and pass successfully a final examination with a minimum grade of C which is equivalent to 50 marks. The learners who enrol for the course come with a range of qualifications, English language proficiency levels, diverse family backgrounds (English-speaking or non-English-speaking), ethnicities, needs and experiences with technology. This study is framed on the basis of all these factors, and involves the view that learning takes place in authentic and real-world environments, requires negotiation and mediation as well as being made relevant to the learner. Accordingly, it is necessary to investigate the types of texts that are popular in the participants' life experiences as well as the role they play inside and outside the language learning classroom. This is based on the proposal that in order for learning to be authentic, it should involve learners' life experiences with reference to the types of texts they read and write, and are acknowledged in the language learning classroom.

3.6.2 A Modelling Approach

Although the characteristics of social constructivism theory are relevant to this research study, published writings have stressed that social constructivism theory is limited in that it does not recognise the need to test ideas and relationships in the real world. Consequently, Keeves (2002) asserted that a 'modelling approach' to both learning and to the advancement of knowledge was necessary so that the constructed models must be tested. Keeves (2002, p. 115) emphasised that a "Modelling approach requires that both individual and corporate knowledge must be tested not only for coherence but also against evidence obtained from the real world in which human beings are living and undertaking their inquiries". In addition, Keeves (2002) affirmed that the adequacy of a model could be tested with both logic and statistical procedures. An investigator of a phenomenon constructed or formed a model,

collected data to test the model and, based on the results of the tests, decided to either reject or accept that "the model provides an adequate representation of the data collected from the real world" (Keeves, 2002, p. 122). The present research study seeks to accomplish the procedures involved in a 'modelling approach'.

3.7 A Theoretical Framework

The setting of this research study is presented in Chapter 1. There are three major facets of this study: (a) language proficiency, (b) needs assessment, and (c) effectiveness of learning language communication skills through the use of multimodal texts. These three facets are causally related: (b)⟶(c)⟶ (a). These relationships are shown in the Causal Framework together with the antecedent facet in Figure 3.2. The aspect of student learning is incorporated by the measurement of change over three occasions. This is built into the Causal Framework. The Causal Framework gives rise to models that must be tested in an appropriate situation. The model portrays the relationships that operate through social constructivist processes involving intercommunication between individuals within classes under the guidance of a teacher. Additionally, the construct of ZPD is based on students' *Bahasa Melayu* performance and entry performance: (a) MUET levels, and (b) SPM or STPM grades.

Data for facets (a) and (c) are collected on three occasions. The first occasion is at the start of the CE1 course before students begin instruction. The second occasion is at the end of the course, 3 months after instruction. The third occasion is three months after students have completed the course and returned from their semester break. Data for facet B is only collected once, namely, when the students start the CE1 course. The rationale for collecting data on three occasions is to investigate if there is change over the three occasions. Collection of data over the three occasions also enables the investigation of causal relationships between the dependent and independent variables. From the theoretical framework, more specific research questions can be developed. The specific research questions that can be tested in this research study are considered in the pages that follow.

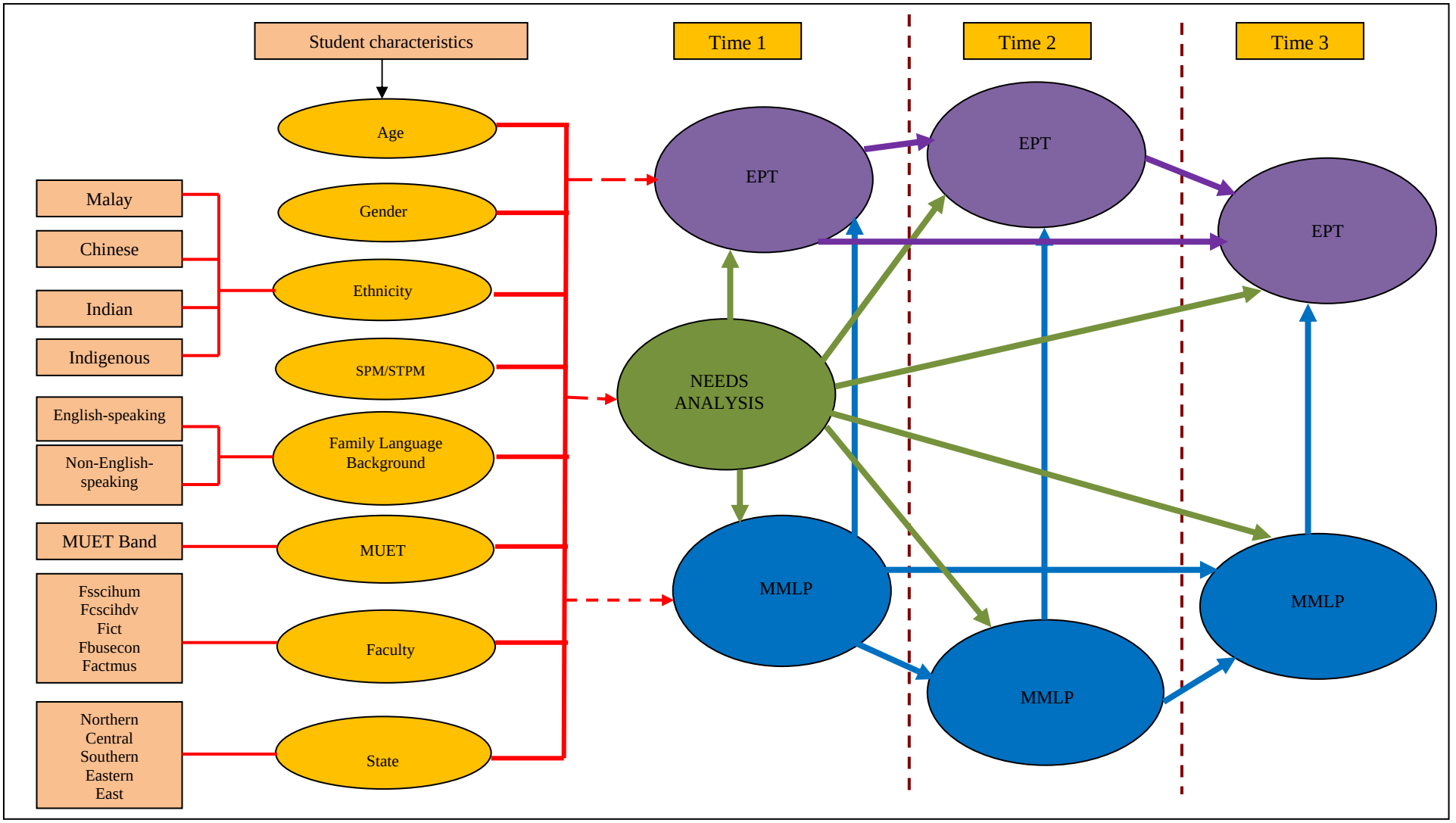

Figure 3.2. Causal Framework of the Research Study

EPT:English Proficiency Test MMLP:Multimodal and Language Proficiency SPM:*Sijil Pelajaran Malaysia* STPM:*Sijil Tinggi Pelajaran Malaysia* MUET:Malaysian University English Test

3.7.1 The Causal Framework

It is the aim of the present research study to test a model based on a theoretical conceptualization of a network of selected variables. The causal framework presented in Figure 3.2 is constructed from theory and argument, as well as published writings. The current research study hypothesizes that needs assessment and effective learning of language communication skills through the use of multimodal texts influences English language proficiency. The relationships between these causal paths are discussed in the earlier section and diagrammatically presented in Figure 3.2. The causal framework in Figure 3.2 raises the need for measuring the direct and indirect influences of each of the causal relationships presented in the Figure 3.2 as well as to find the degree to which variability of a given effect is influenced by each particular cause. Consequently, the causal framework presented in Figure 3.2 allows for the testing of causal models based on the present research study's conceptualization of the relationships of the relevant variables. It is possible that student characteristics such as: (a) age, (b) gender, (c) ethnicity, (d) entry performance, namely, *Sijil Pelajaran Malaysia* (SPM) or *Sijil Tinggi Pelajaran Malaysia* (STPM) grades and Malaysian University English Test (MUET) levels, (e) family language background, (f) Faculty, and (g) the States they come from influence their learning needs, as well as their language communication skills obtained through the use of multimodal texts. All of these factors ultimately affect students' English language proficiency. It is possible that one or more of these variables cause particular effects. It is also likely that some of the more distal factors have their effects mediated through more proximal factors. It is probable too that that these particular effects may change over the three different time points.

Thus an examination of the search for these cause relationships is needed. Past research studies as well as published writings indicate that this can be derived from testing these causal effects for their statistical significance and magnitudes through statistical procedures such as path analysis and structural equation modelling. These procedures are discussed in detail in the following chapters, but it is sufficient to say here that the design of the present research study is guided by these conceptualizations of relationships and the causal models that are hypothesised. Consequently, it is these concepts that direct the following research questions. These questions involve the identification of the causal effects of direct or indirect relationships between the various networks of selected variables.

1) How is English language proficiency defined by published research writings?

2) What is the underlying structure of factors and traits investigated in the Needs Analysis Questionnaire?

3) What is the underlying structure of the factors and traits incorporated in the Multimodal and Language Proficiency Questionnaire?

4a) How does the Communicative English One (CE1) course meet learner needs?

4b) How does the Communicative English One (CE1) course contribute to the development of English Language Proficiency?

4c) From the students' perspective, how useful is the Communicative English One course?

5a) What are the forms of multimodal technologies that students have access to?

5b) How frequently are multimodal technologies used for learning English?

6) Does the Communicative English One (CE1) course help to develop English language proficiency?

7a) Can multimodal technologies contribute to English language proficiency?

7b) What factors help the development of Multimodal and Language Proficiency?

8) What are the characteristics of the students that influence proficiency in English language learning?

9) Does the CE1 assist the students who enter the University with lower scores on the Malaysian University English Test (MUET)?

10) Can knowledge of the students' needs help in planning the Communicative English One (CE1) course?

3.8 Summary

Although information and communication technologies play a major role in contemporary societies, it is not involved regularly or received favourably in schools and classrooms. Consequently, even though technology and multimodal texts are popular in students'

everyday living, it is not acknowledged by educators who insist on employing traditional print-based materials in language learning and teaching. A more diverse teaching and learning setting that complements both traditional and formal teaching methods and educational materials by using alternative, less formal techniques that utilise information and communication technologies may result in better learning outcomes. It is this proposition that forms the basis of the present research study. An analysis to the background of this study identifies the relevant issues, problems and challenges experienced by language learners in Malaysia, more specifically in UPSI. Three important concepts are identified: English language proficiency, learning needs, and technology and multimodal learning.

It is evident that students are experiencing many challenges in the language learning environment as a result of factors such as: (a) lack of a common definition with regard to 'proficiency', (b) varying levels of proficiency at the entry point into the language program, (c) the different learning needs of students, and (d) lack of acknowledgement of learners' technological experiences. It is then important that a research study investigating the language learning behaviours of the students in UPSI is conducted. As a first step, a review of previous research into the acquisition of the English language is undertaken. It is clear that a lack of common definition of 'proficiency' results in many language learning problems experienced by students. There is a need for unambiguous standards against which the characteristics of proficiency can be measured. A general definition cannot necessarily apply across all instructional situations, as factors such as the learners' primary language proficiency, language background and culture need to be taken into consideration. However, it is apparent that, in order to be perceived as 'proficient', students need to have an underlying knowledge of the language system and the ability to use this knowledge as and when the situation dictates. An appropriate English language proficiency test is required to identify a student's proficiency level as well as to assess the development of English proficiency over time.

Furthermore, it is important that language courses and programs conduct needs assessment surveys in order to gather specific knowledge and information regarding students' learning requirements. This is clearly the first step involved when designing and then implementing language courses or programs. Identification of students' learning needs is likely to result in better learning outcomes. These ideas and relationships need to be tested after an appropriate theoretical framework is conceptualised. Two theories: (a) social constructivism; and (b) a modelling approach are adopted to direct the operation of this

research study. This chapter describes the theoretical framework in terms within the context of both these theories. The chapter also describes how the ideas and relationships involved can be tested. Language learning theories and previous research indicate that these ideas are causally related. In order to test these relationships it is necessary that the development of English language proficiency is measured over at least three occasions. In addition, it is hypothesized that needs assessment as well as the effective teaching and learning of language communication skills through the use of multimodal texts influences the development of English language proficiency. Consequently, specific Research Questions that are associated with the testing of these causal effects are important for this present research study as they require explication and solutions to be proposed to address the language learning problems and challenges currently experienced by students in UPSI more specifically, and in other language learning programs more generally. Hence, the challenge of the next chapter is to design a study to test the models arising from the framework in order to answer the Research Questions advanced in this chapter.

Chapter Four
Designing the Study

4.1 The Design of the Study

In Chapter 3, the Causal Framework and Research Questions for this research study are presented. The design and approaches undertaken in the conduct of study are: (a) to test the models in the Causal Framework, (b) to answer the Research Questions, and (c) draw inferences for policy and practice. Patton (1990), stated that there was no single best method for investigation, not even for a study of a particular program, at a particular time with a particular budget. Thus a choice of approach depends on the answers to questions such as: Who the information is intended for? How the information is to be used? What is the content of the information needed? When is it needed? and What are the resources available to obtain the information? (Patton, 1990). The answers to these questions direct the researcher to a so-called 'triangulation mixed method design'. The triangulation mixed method design allows the researcher to "simultaneously collect both quantitative and qualitative data, merge the data and use the results to understand a research problem" (Creswell, 2005, p. 514). There are two theoretical approaches that direct this study: (a) social constructivist, and (b) modelling. The social constructivist theoretical approach is involved in the collection of qualitative data to provide a description of the processes involved, while the modelling approach guides the collection of quantitative data to test the causal models and to provide an explanation in terms of causal relationships.

Creswell (2005) reiterated that a mixed methods design was a good approach to use if the researcher "seeks to build on the strengths of both quantitative and qualitative data" (p. 310). Furthermore, Creswell suggested that a mixed methods study would also enable the researcher to build from one phase of the study to another. In addition, this method allowed the researcher "to follow up a quantitative study with a qualitative one to obtain more detailed specific information than can be gained from the results of statistical tests" (p. 510). Most importantly, a mixed method design enables the use of triangulation, and enables the researcher to collect both quantitative as well as qualitative data simultaneously which provides for the investigation of the phenomenon, namely, the impact of multimodal texts on the development of English language proficiency. Freeman (1998) argued that both teaching

and researching were concerned with the processes of knowing and establishing knowledge; and for teachers, the processes focused on understanding what was going on in the classroom (Nallaya, 2002) and whether learning took place.

As the researcher is investigating a phenomenon that is unfolding in the course that she is assigned to teach, detailed and descriptive data that can deepen her understanding of the phenomena under investigation are needed. Furthermore, an approach that enables the use of data collection techniques and that facilitates the collection of data related to observable and non-observable behaviours is necessary. A general case study design is therefore chosen because Merriam (1990) stated that it was a research design that could be used to study a phenomenon systematically. This design also enables the investigation of a daily occurring, and emerging phenomenon in a naturalistic way, so that it can be examined and defined (Yin, 2003). Focusing on a selected group to investigate the phenomenon gave a holistic view of the effectiveness of the Communicative English One (CE1) course as well as an examination of the impact of multimodal texts on English language proficiency (Nallaya, 2002).

Data for both aspects of this research study can be collected simultaneously and viewed as complementary sources of information. Moreover, both the qualitative and quantitative analysis of the data can be compared to examine if they yield "similar or dissimilar results" (Creswell, 2005, p. 514).

4.1.1 Research Site

Three criteria influenced the choice of the research site for this study and they were: the goal and objectives of the study, access to the site, and the relevance of the site to personal professional practice. The primary goal of this study is to investigate the impact of multimodal texts on the development of English language proficiency and to undertake a study of pre-service teachers enrolled in an English language proficiency course in Malaysia. In addition, it is the goal of this research study to identify if these pre-service teachers' characteristics influence their English language learning, proficiency and development. Finally, it is an objective of this research study to identify the respondents' expressed learning needs. Consequently, it is essential that a university which offers pre-service teacher education is selected. Furthermore, a case study necessitates that the researcher is present on the site to study the real life happenings as they unfold naturally in the Communicative

English One (CE1) course. The CE1 course is specifically chosen for investigation as the researcher has taught the course for three years prior to embarking on her doctoral studies. The need to investigate this course is important as the students in the CE1 often complain about the problems and challenges that they face in trying to complete the course successfully. Hence, the university where the researcher is teaching enables easy access and facilitates a naturalistic inquiry (Patton, 1990). Elements such as the time factor for the collection of data, cooperation of the participants and university authorities, and convenience of access to participants obviously play a major role in the selection of this site.

Universiti Pendidikan Sultan Idris (UPSI) is the university that offers only a teacher education program in Malaysia. It has a history that goes back for more than 85 years. It was set up as a teacher training institute, and was upgraded to a university in 1997. The characteristic that makes UPSI unique from other public universities in Malaysia is that, although other universities have faculties of education that are responsible for training teachers, there are other faculties alongside teacher education that produce such professionals as doctors, engineers, lawyers and accountants. UPSI is responsible for producing only teachers. All of its faculties train teachers for various disciplines. The faculties offer bachelors as well as postgraduate degrees by coursework and research. One of UPSI's main agendas is that it is responsible for pre-service teacher education for teachers who plan to teach their major subjects in secondary schools in Malaysia.

Entrance to UPSI is determined by the Centre for University Unit where selection is made centrally at mid-year and in a way that is similar to other public universities in Malaysia. There are three channels through which students may obtain a place in UPSI. They may: (a) come in with the *Sijil Tinggi Pelajaran Malaysia* (STPM) or Higher School Certificate; (b) apply with a diploma that has been awarded from a recognised institute of higher education; or (c) choose to do a twinning program in collaboration with a teacher training college and the university, if an in-service teacher (primary school teacher). These students are allowed to apply for this twinning program with their *Sijil Pelajaran Malaysia* (SPM) certificate or the Malaysian Certificate of Education. Thus students finish one year at the training college and two years at UPSI.

4.1.2 The CE1 Course

CE1 is a proficiency course that teaches the four skills of listening, speaking, reading and writing. This course is designed to equip undergraduates with the necessary language skills that facilitate learning in the specific programs of the faculty in which they are enrolled. The aim of the course is

> to enhance language skills in listening, speaking, reading and writing for communicative purposes. Focus is also given to grammar and enrichment of vocabulary. Throughout the course, students will be equipped with English skills for proficiency at the intermediate level.
>
> (*Instructors Plan and Curriculum Design*, 2006, p. 2)

The objectives of CE1 are to enable students to:

> acquire a wide range of vocabulary, use grammatical items correctly in various contexts, listen to and understand conversations and discussions, read and understand various types of texts, carry out discussions, conversations and role plays as well as write various types of paragraphs, memos and formal letters. (p. 2)

The teaching and learning process of the CE1 is based on a five-unit module that is entirely print-based. The course is taught for 14 weeks. Assessment comprises 60 per cent for coursework, mainly comprised of tests of speaking, reading and writing, administered in the first half of the semester. The remaining 40 per cent is awarded for the final examination that consists of a reading comprehension section, a grammar component, and a writing segment. Students have to obtain a minimum grade of C that is equivalent to 50 marks. If they fail they have to re-enrol for the course in the following semester. Only after passing this course, are students allowed to register for CE2 which is the second level of the course (Nallaya, 2006). UPSI stipulates that students have to enrol for two English language proficiency courses: CE1 and CE2. However, students are not allowed to enrol for CE2 until they have passed CE1.

The aim of CE1 is to equip undergraduates with English language skills of listening, speaking, reading and writing so that they can participate efficiently in the 'Discourse' community of their respective program, namely, the program in which they are enrolled. However, it is not clear if the students enrolled for this course are expected to use English to communicate outside the classroom. It is also not clear if the CE1 course adequately equips students with the necessary skills to participate effectively in the respective courses within which they are enrolled as no monitoring is done after students have completed the program. Figure 4.1 presents diagrammatically the current situation in regard to the CE1 and the course participants.

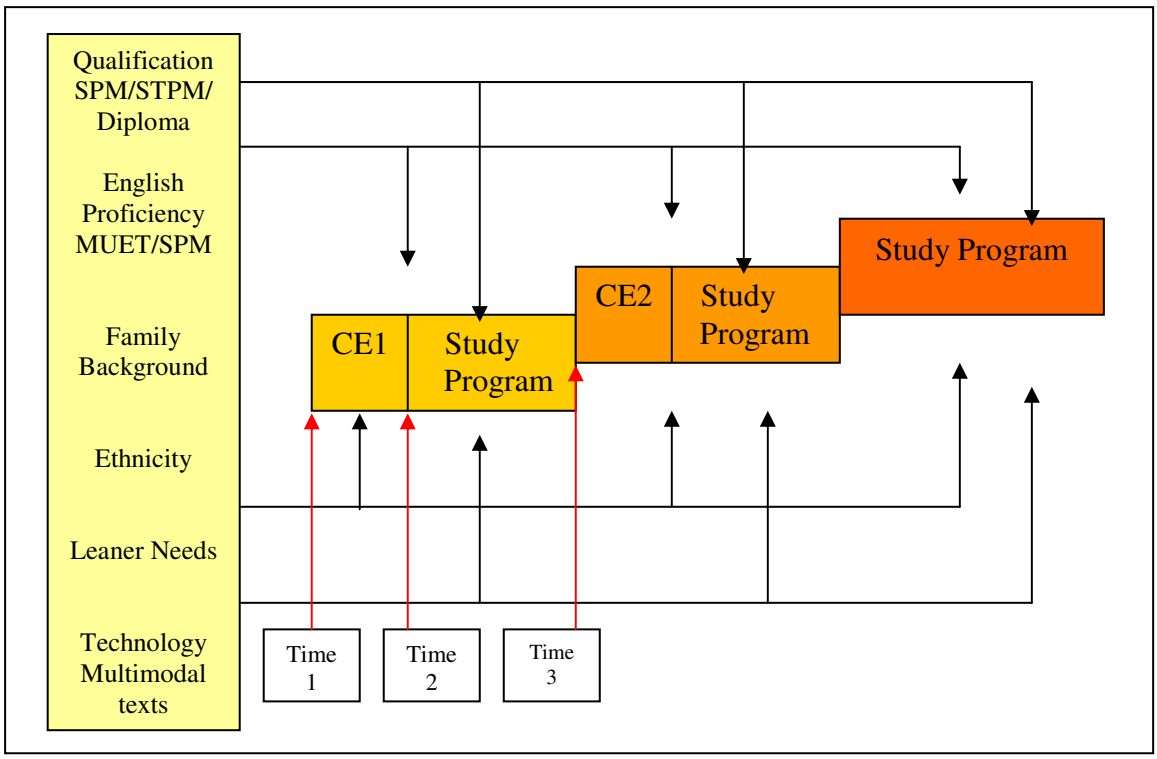

Figure 4.1. Communicative English One Course Overview

The students enrol for CE1 in their first year while simultaneously engaged in their respective courses of the study program in which they are enrolled. Upon passing CE1, they register for CE2. Once they have passed both these courses and have obtained the minimum of Band 3 in the Malaysian University English Test (MUET) (refer to Appendix 1.1), if they have not already attained it before coming to the university, they are not required to enrol in any other English language proficiency courses. However, no research has been undertaken to evaluate how well the CE1 course contributes to the students' English language proficiency development. It is also possible that there are other influencing factors that contribute to their development of English language proficiency. As is shown in Figure 4.1, the students who enrol for the CE1 course come with a range of qualifications and from a range of backgrounds with different English language proficiency levels, diverse family backgrounds (English-speaking or non-English-speaking), ethnicities, as well as needs and experiences with technology. All of these factors can contribute to the students' English language proficiency learning experience.

4.1.3 The Course Participants

The CE1 course participants come from a range of lifeworlds. Some of them have had considerable working experience and others none. Some of the students are young adults, while others are mature and have families with teenaged children. The great majority of these students come from non-English speaking backgrounds and can also be classified into different ethnic groups. However, most of the students who enrol for this course are Malays. Coming from diverse lifeworlds, these students have different needs. Some of the students clearly recognise that they have problems associated with their development of English language proficiency and hence expect the course to help them overcome these problems. Other students enrol in the course simply to fulfil program requirements. They appear to see the course as a purely academic exercise. There are some students who assume that the course can equip them with the necessary skills to participate in their respective study programs. Generally, many of these students are well-versed in technology, since their daily lifeworlds are made up of cell phones, computers, emails, web pages, DVDs, CD-ROMs, ipods and power point presentations (Nallaya, 2006).

A considerable number of students who enrol for CE1 have obtained only low credits or ordinary passes in the *Sijil Pelajaran Malaysia* (SPM) examination English language paper and a Band 1 or 2 in the MUET (refer to Appendix 1.1 for detailed description of these bands). Therefore, it is usual that the students who enrol for the CE1 course have limited English language proficiency. Their grades in the final examination for this course generally range from Bs to Ds. Some of the students do not manage to pass the CE1 course examination and re-enrol for the course two or three times. Although the students who enrol for the CE1 course come with diverse characteristics with regard to proficiency levels, family backgrounds, ethnic groups, needs, as well as lifeworlds, they have no choice but to participate in the academic 'Discourse' community. Students who are unable to display this ability are seen as outsiders and labelled as 'Learners of Limited Proficiency' or 'Marginalised Learners'. Since CE1 students are likely to have problems with English language proficiency, as a result of the educational system, the course is likely to become a struggle for many of them.

4.2 Design of the Sample

The respondents of this study were selected using the procedures and criteria of purposeful sampling. Patton (1990) suggested that the power of purposive sampling lay in selecting

information-rich cases for in-depth study. Information-rich cases were those from which one could learn a great deal about issues of central importance to the study. Purposive sampling was used for the context of this study as prior research suggested that it was a sampling strategy that was commonly used in exploratory research (Neuman, 2006). This sampling technique was common in studies where the "cases are selected with a specific purpose in mind or unique cases that are especially informative" (Neuman, 2006, p. 222). According to Patton (1990) there were different strategies that could be employed to select purposefully information rich cases. For the purpose of this study, Patton's (1990) intensity sampling strategy was used to select key participants who would enable an in-depth study of the phenomena being investigated. Intensity sampling was also used to select information-rich cases that manifested the phenomenon of 'intensity', such as good or weak students and above average or below average students (Patton, 1990). Intensity sampling required "some prior information and considerable judgement" (Patton, 1990, p. 172). From the CE1 course 400 out of 1,300 students who were enrolled were selected to take part in the quantitative section of this research. These cases displayed a common characteristic - a low level of English language proficiency. These cases were selected using an expert's judgement, namely, the Coordinator of the course (Neuman, 2006).

Out of the 400 students, thirteen students were selected for the qualitative phase of the research study. The researcher once again relied on the CE1 course Coordinator's judgement for the selection, as information rich cases were sought. The CE1 course Coordinator had prior access to information and was able to make judgements with regard to the individuals who would be information rich cases, thus facilitating the collection of meaningful data. These students were interviewed individually. The rationale for selecting 13 students for the interviews was the need to investigate "a more open range of experiences for a smaller number of people (seeking depth). In-depth information from a small number of people can be very valuable, especially, if the cases are information rich" (Patton, 1990, p. 184).

4.2.1 Research and Ethics Committee Approval (refer to Appendix 4.1)

This study was approved by the University of Adelaide Human Research Ethics Committee. The committee vetted and endorsed the instruments that were employed to collect data for this research. The approval also covered any other additional information considered necessary by the researcher pertaining to the study, such as students' personal information and results, as well as written documents in the research setting.

The ethical issue of confidentiality was dealt with through the following procedures:

(a) confidentiality was maintained at all times;

(b) participation in the study was voluntary;

(c) any audio or video-taped sessions of classroom teaching and interviews were carried out only with the prior approval of the participants; and

(d) both quantitative and qualitative data were analysed solely by the researcher.

4.3 Analysis Techniques

The present study is designed with appropriate analytical techniques in mind, since it is recognized that statistical techniques allow the testing of specific models as well as the examination of the direct and indirect influences of one variable on another (Phakiti, 2007). Data that were collected using tests and questionnaires were analyzed through various appropriate statistical procedures. Factor analysis is carried out in this research study to "examine which sets of observed (measured) variables sharing common variance-covariance characteristics define constructs" (Schumacker & Lomax, 1996, p. 44). Factor diagrams are used to

> display which variables are hypothesized to define which factors… therefore permit representation of the relationships among factors, while also displaying which observed (measured) variables define factors.
>
> (Schumacker & Lomax, 1996, p. 46)

Confirmatory Factor Analysis (CFA), is conducted to confirm that a set of variables reflect a specific construct (Kelloway, 1998; Schumacker & Lomax, 1996). Moreover, CFA, according to Schumacker and Lomax (1996, p. 46),

> permits a set of variables to uniquely define a factor, and/or permits a single variable to share variance on two or more factors. It is also possible to have several orthogonal factors define yet another single higher-order factor known as a second-order factor.

The first step employed in the research study is the formulation of a measurement model based on theory. Once the data are collected, "the interrelationships among variables in the variance-covariance matrix are analyzed to identify the hypothesized factors (constructs)" (Schumacker & Lomax, 1996, p. 46). The loadings of each observed variable on a factor are estimated to identify "its correlation with the construct of interest and in its commonality with other variables" (Schumacker & Lomax, 1996, p. 64). Moreover, these researchers emphasized that

> the measurement model reflects the extent to which the observed variables are assessing the latent variables in terms of reliability and validity.
>
> (Schumacker & Lomax, 1996, p. 64)

Item Response Theory (IRT), is also used to scale and test item scores using the mathematical relationship between a respondent's level of performance (or other hypothesized traits) and item responses. This is done in order to examine the unidimesionality of the instruments. Rasch Modelling, a form of IRT, is used to model the relationships between a person's performance and the difficulty level of particular items in a set of items (Linacre, 2000). The use of IRT, and more specifically, the Rasch Model in the present study provides an estimate of a respondent's standing on an interval scale of measurement. Employing Rasch analysis also provides a range of detailed information for checking whether or not the scores or responses in the data are consistent and meaningful. For the criterion variable, namely, the English Proficiency Test, Rasch analysis and Confirmatory Factor Analysis are not carried out. The present research study maintains the procedure as similar to the actual CE1 assessment processes as is possible. In the CE1 course, the EPT is designed by the instructors of the course each semester. Only raw scores are used to specify the grades students of the CE1 course obtain.

In addition, this study also employs path analysis as a method for "studying the direct and indirect effects of variables" (Schumacker & Lomax, 1996, p. 39). According to these researchers, path analysis tested the hypothesized causal relationships and estimated the causal relationship between variables when

> (a) temporal ordering of variables exists, (b) covariation or correlation is present among variables, (c) other causes are controlled for, and (d) variables are measured on at least an interval level.
>
> (Schumacker & Lomax, 1996, p. 39)

As the present research study operates over three occasions, it satisfies the requirement and temporal ordering of variables for the estimation of causal relationships using path analyses.

Structural Equation Modelling (SEM) is carried out to identify the "direct as well as indirect relationships among the latent variables and is used to describe the amount of explained and unexplained variance" (Schumacker & Lomax, 1996, p. 50). According to Schumacker and Lomax (1996) structural equation models encompassed a wide a range of models, such as univariate or multivariate regression models and path analysis models. SEM

differs from path analysis in that the latter sometimes used only observed variables. However, in both analytical procedures the structural equations specified the hypothesised causal influence on the dependent variables of the independent variables as well as their mediating effects. Although SEM and Path analysis are statistical procedures that have many strengths in data analyses, they have their limitations as they, in the main, are only able to analyse data at a single level. When the data are hierarchical or nested in nature, Hierarchical Linear Modelling (HLM) is the statistical procedure that is widely used. HLM is employed in the present research study as the data are collected over three occasions. The use of HLM in the data analysis enables the identification of relationships occurring at the student level, as well as between occasions, together with cross-level interaction or moderating effects. However, HLM does not undertake the estimation of mediating effects.

The data that were collected through qualitative methods such as interviews and written responses, from thirteen students and two course administrators, were transcribed, identified, reduced, coded and categorised. The data were classified accordingly to descriptive codes such as background, inherent traits, English Language Proficiency levels, perceptions about the CE1 course, perceptions about multimodal texts, as well as the types of language behaviours practised inside and outside the classroom. Once coded, the data were analysed for emerging themes or patterns (Miles & Huberman, 1994; Richards, 2006; Ryan & Bernard, 2003). The data were initially displayed using matrices (Miles & Huberman, 1994). Subsequently, the interrelations between the data were examined.

All the data collected through interviews and the open-ended questionnaire were analysed by writing a case analysis for each key participant. The next step involved a cross-analysis of the responses of the key participants (Patton, 1990). This was used to provide answers to the research questions.

4.4 The Students and their Characteristics

Universiti Pendidikan Sultan Idris (UPSI) is a popular choice by many students who aspire to become teachers because of its strategic location. Situated in the state of Perak (refer to Chapter 1), UPSI is the most accessible university from the East Coast States. As a result, a large number of students come from the States of Kelantan, Terengganu and Pahang. The students studying in UPSI range in age from early 20s to the mid 40s in years. Besides this,

the students are made up of different ethnic groups and mostly come in the main from non-English-speaking background. Most importantly, the students are enrolled in different study programs in one of the faculties.

As it is possible that student characteristics may be associated with English language proficiency levels, in particular, and more specifically learning needs as well multimodal and language proficiency, it is necessary that the sample for this study is described in some detail. A total of 316 students out of the 400 students approached, by producing sound data and representing a little under 80 per cent of the chosen sample, are the respondents in this study. These respondents are discussed with regard to the following characteristics: gender, age, ethnicity, States of origin, faculties enrolled in for study program and family language background (whether Malay-speaking, English-speaking or non-Malay-speaking). The SPSS version 17.0 (SPSS Inc., 2008) computer program is used in the analysis and presentation of the findings in this section.

Gender

Out of the 316 CE1 students under survey in this study, 70 are male and 246 are female. There are more female than male students within the university and this trend can be observed in the overall enrolment of the CE1 course. The breakdown of male and female respondents in this study is presented in Table 4.1.

Table 4.1

Respondents' Gender

Gender	Frequency	Per cent
Male	70	22.2
Female	246	77.8
Total	316	100.0

Age

Respondents in this study range from 19 years to 29 years of age. Members of the sample who are 21 years of age total 129 respondents making up the largest age group in this study. This is followed by the second largest age group of respondents who are 22 years old totalling 71 out of 316 respondents. The next groups of 43 respondents are 20 years of age, 34 respondents are 23 years of age and 21 students are 24 years of age. Thus a, large number of respondents lie within the ages of 20 years to 24 years. Only four respondents are 19 years

old, while five are 25 years old and, another four are 26 years old, three are 27 years old and two are 28 and 29 years old, respectively. The distribution of respondents' age can be explained with reference to the education system in Malaysia. Most students in Malaysia finish their *STPM or* Higher School Certificate at the age of 19 years and then apply to further their studies at a university. However, there are various pathways into the university (refer to earlier discussion in Section 4.1.1 of this chapter).

Students who apply for a place with their STPM results are usually 19 to 20 years of age. Students who obtain a place with a diploma are usually 21 to 23 years of age depending on the length of their diploma studies. Some diplomas are awarded after one year of study and others after three years. The in-service teachers, who are already teaching in primary schools with certificates or diplomas from teacher training colleges, come to the university to obtain a degree so that they can teach in secondary schools and for economic benefits. Hence, their ages can range from 24 years to anything beyond, depending on the number of years they have been teaching in primary schools. Figure 4.2 provides a histogram of the age profile of the students involved in this study.

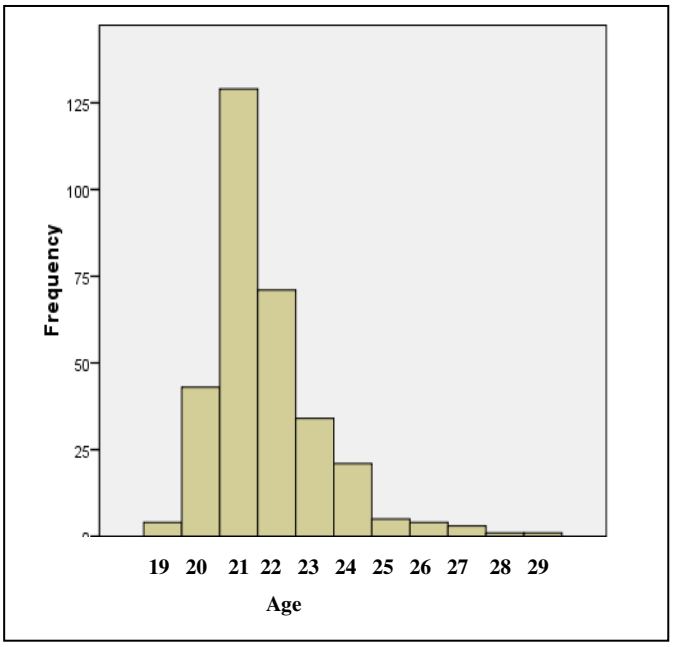

Figure 4.2. Histogram of Respondent's Age Profile (N=316)

Ethnicity

As is mentioned in Chapter 1, the students who attend universities in Malaysia come from diverse ethnic backgrounds and speak many different languages and dialects. Similarly, the

respondents of this study can be classified into different ethnic groups. The majority of the respondents are Malays, totalling 294. The second largest ethnic group are the Indigenous students who total 18. In Malaysia the Indigenous students come from the East Coast States of Sabah and Sarawak. The composition of Indigenous people are made up of *Bajau, Bidayuh, Iban, Kadazan-Dusun, Dayak, Melanau*. Like Malays, the Indigenous people too are referred to as '*Bumiputera'* or 'Sons of the Land'.

Chinese and Indian students are not well represented in this study. However, the composition of these ethnic groups is representative of the students enrolled in the CE1 course. The students who enrol in this course are heavily represented by the Malay ethnic group. Chinese and Indian students do not enrol in large numbers. This pattern of representation also reflects the overall enrolment of students in UPSI, as well as the composition of ethnic groups in Malaysia. The estimated population for Malaysia in 2007 was 27.17 million people of whom 93 per cent were citizens and 7 per cent were non-citizens. Of this population, the *Bumiputeras* made up 66.4 per cent, Chinese - 24.8 per cent, Indians - 7.5 per cent and others - 1.3 per cent. Figure 4.3 illustrates the ethnic composition of the sample. Table 4.2 lists the breakdown of respondents' ethnicity.

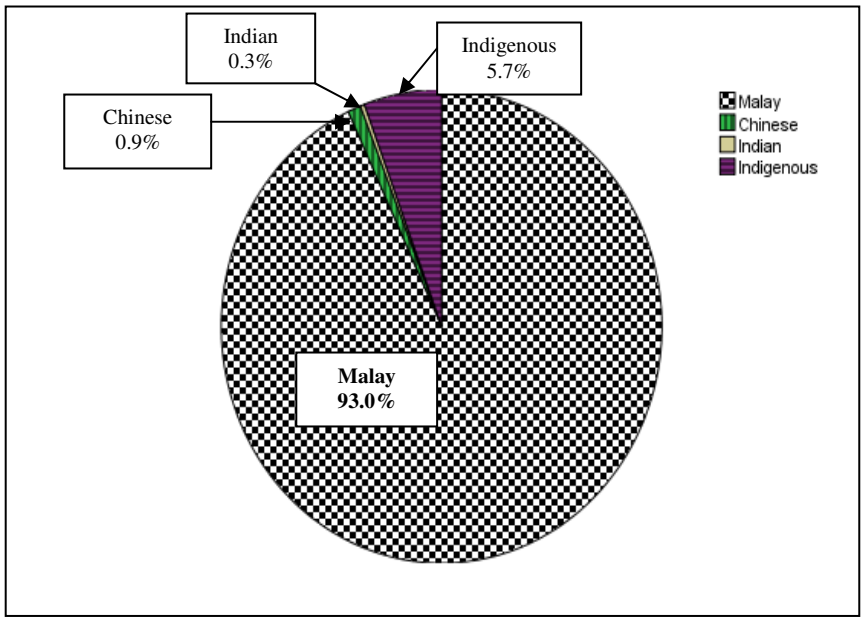

Figure 4.3. Pie Chart of Respondents' Ethnicity

Table 4.2

Ethnic Composition of Respondents

Ethnicity	Sample Frequency	Sample Per cent (%)	National Citizens (%)
Malay	294	93.0	66.4
Chinese	3	0.9	24.8
Indian	1	0.3	7.5
Indigenous	18	5.7	1.3
Total	316	100.0	100.0

State of Origin

The States of origin of the respondents play a potentially important part in this study as some States are heavily populated by a particular ethnic group while others are more multi-racial. From observation, it is found that students who come from a State that is populated by one ethnic group are usually monolingual. Students who are living in States that are multi-racial are generally bilingual or multilingual. There are however, instances where the opposite is true. Its strategic location promotes UPSI as a potential choice of tertiary institution for many students living in the Northern and Eastern States of Malaysia.

Out of the 316 respondents in this study, 112 list the Eastern States as their State of origin, with 87 respondents from the Northern States and 54 from the East Coast States. The Southern and Central States are both represented by 33 and 30 students respectively. The statistics for respondents' State of origin reflects of the overall student population in UPSI. A majority of students studying in UPSI generally come from the Eastern and Northern States as well as the East Coast States. Respondents' State of origin is presented in Table 4.3 and Figure 4.4 illustrates the statistics with a bar graph.

Table 4.3

State of Origin of Respondent

States	Frequency	Per cent (%)
Northern	87	27.5
Central	30	9.5
Southern	33	10.4
Eastern	112	35.4
East Coast	54	17.1
Total	316	100.0

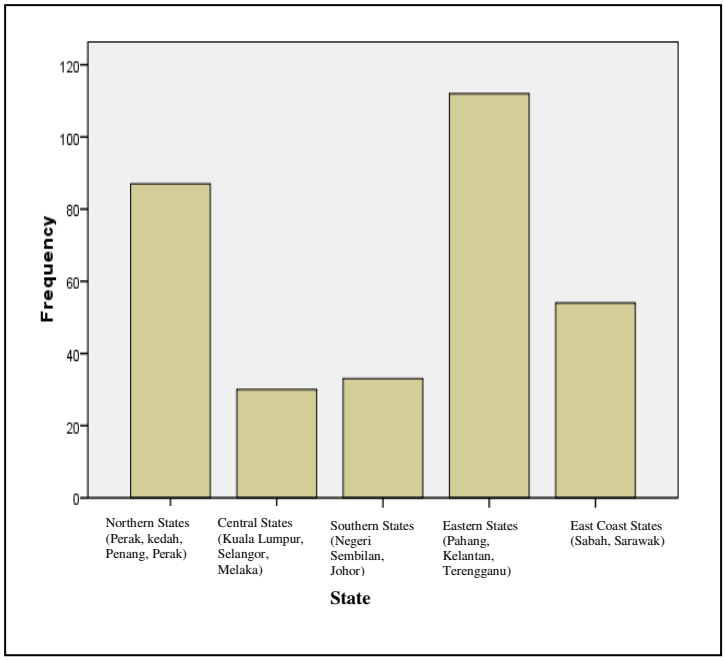

Figure 4.4. Bar Graph of Respondents' State of Origin

Faculty

The CE1 is a core university course and students from all faculties must enrol in the course. The CE1 course is expected to provide students with the necessary academic skills to facilitate learning in their individual study programs. It is relevant to consider the faculty from which the respondents' are drawn as this may influence their perception of their learning needs, multimodal and language proficiency, and most importantly their English language proficiency levels. Furthermore, it must be taken into consideration that students from different faculties and study programs may have different learning needs. However, the current CE1 course is designed to cater for a homogenous group, which may or may not have an impact on their learning outcomes. Categorization of respondents according to faculties is given in Table 4.4.

Table 4.4

Categorization of Respondents According to Faculties

Faculties	Frequency	Per cent
Social Sciences and Humanities	167	52.8
Cognitive Science and Human Development	59	18.7
IT and Communication	8	2.5
Business and Commerce	45	14.2
Arts and Music	37	11.7
Total	316	100.0

The Social Sciences and Humanities faculty has the most respondents totalling 167 students. The faculty that has the second highest number of respondents is Cognitive Science and Human Development with 59 students. This is followed by Business and Commerce with 45 respondents and Arts and Music with 37 respondents. The Faculty of IT and Communication has the least representation with only 8 respondents. The categorization of respondents according to faculties is represented graphically in Figure 4.5.

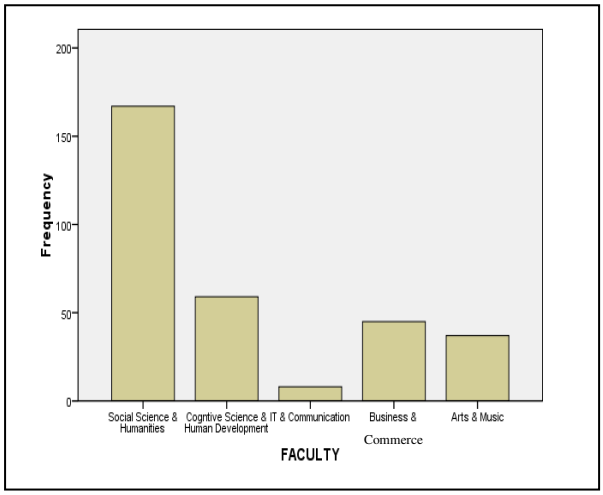

Figure 4.5. Categorization of Respondents According to Faculties

Family Language Background

Students in UPSI generally come from either English-speaking or non-English-speaking backgrounds. This characteristic is relevant to the study because family background is likely to influence the level of English language proficiency. Although, data are not available to support this view, students who come from English-speaking backgrounds may be expected to have higher English proficiency levels compared to those who do not. It is thus of relevance to investigate this characteristic as respondents' English-speaking or non-English-speaking background may impact on their learning needs, their multimodal and language proficiency as well as their level of English language proficiency. The data with regard to family language background are given in Table 4.5.

Table 4.5

Family Language Background of Respondents

Background	Frequency	Per cent
English-speaking	15	4.7
Non-English-speaking	301	95.3
Total	316	100

Since 95.3 per cent of the respondents come from non-English-speaking backgrounds and only 4.7 per cent came from English-speaking homes, this composition of the sample is likely to place some restrictions on the analyses that can be carried out in this study. However, as this study is focused on the development of English language proficiency and is longitudinal in nature, it is necessary to consider the family language backgrounds of the small group of English-speaking students.

Table 4.6

Family Language Background and Ethnicity

Ethnicity	English or Non-English Speaking		
	English-speaking	Non-English-speaking	Total
Malay	13	281	294
Chinese	0	3	3
Indian	0	1	1
Indigenous	2	16	18
Total	15	301	316

Table 4.6 shows that out of the 294 Malay respondents only 13 come from English-speaking homes. All three Chinese and the single Indian respondents come from non-English-speaking backgrounds. Of the 18 indigenous respondents, only two come from English-speaking backgrounds. In total, out of the 316 respondents who are members of this study, only 15 come from English-speaking homes. Accordingly, out of 87 students from the Northern States, only two come from English-speaking homes. One respondent from the Central States, three from the Southern States, five from the Eastern States and four from the East Coast States are from English-speaking backgrounds. The remaining respondents are all from non-English-speaking homes. These data show that there are many more respondents who come from non-English-speaking homes compared to English-speaking homes irrespective of ethnicity or States of origin. The data confirm the probable reasons as to why

the Malaysian Government has taken initiatives to implement educational reforms such as the teaching of Mathematics and Science in English, the revamping of the Malaysian University English Test syllabus and the teaching of English Literature as early as in the primary school, in order to raise the English language proficiency standards of all students in Malaysia. Hence, this study becomes especially significant as it is vital not only to identify proficiency levels of students, but also to identify other characteristics that may be associated with proficiency. Table 4.7 records respondents' family language background with reference to students' States of origin.

Table 4.7

Family Language Background and States of Origin

States	English or Non-English Speaking		
	English-speaking	Non-English-speaking	Total
Northern States (Perlis, Kedah, Penang, Perak)	2	85	87
Central States (Kuala Lumpur, Selangor, Melaka)	1	29	30
Southern States (Negeri Sembilan, Johor)	3	30	33
Eastern States (Pahang, Kelantan, Terengganu)	5	107	112
East Coast (Sabah, Sarawak)	4	50	54
Total	15	301	316

Similar statistics are seen in the cross-tabulation between family background and faculty. The cross-tabulation statistics are shown in Table 4.8. It is shown that out of 167 student respondents who come from the Faculty of Social Sciences and Humanities, eight are from English-speaking backgrounds. Similarly, out of 59 student respondents from the Faculty of Cognitive Science and Human Development, two students come from English-speaking backgrounds. Moreover, out of 45 and 37 student respondents from the Faculty of Business and Commerce and the Faculty of Arts and Music respectively, two respondents each come from English-speaking homes. One respondent out of eight respondents from IT and Communication faculty comes from an English-speaking family background. The rest of the respondents are from non-English-speaking homes.

Table 4.8

Family Language Background and Faculty

Faculty	English/Non-English Speaking		
	English-speaking	Non-English-speaking	Total
Social Sciences and Humanities	8	159	167
Cognitive Science and Human Development	2	57	59
IT and Communication	1	7	8
Business and Commerce	2	43	45
Arts and Music	2	35	37
Total	15	301	316

These characteristics of the sample may or may not have bearings on the final analysis of the data.

4.5 Pilot Study

Previous research had established that pilot studies were a necessary phase of any investigation and that researchers needed to conduct such a study for many sound reasons. Moreover, van Teijlingen and Hundley (2001, p. 1) argued that a pilot study could be used in research in two ways: (a) as a feasibility study, namely, a small scale version or trial run done in preparation for the major study; or (b) for pre-testing or trying out particular research instruments. In this investigation, the main aim of the pilot study was "to test the adequacy of the research instruments, namely, pilot the wording and the order of questions, or the range of answers on multiple-choice questions" (van Teijlingen and Hundley, 2001, p. 1) as well as to assess the validity and reliability of the instruments prior to their use in the main study.

The Needs Analysis and Multimodal and Language Proficiency questionnaires, and the English Proficiency Test were shown to experts in the School of Education at The University of Adelaide and their suggestions and comments were taken into consideration. The face and content validity of the instruments were checked through this process. In addition, a pilot study was undertaken at the University Senior College, University of Adelaide to test the practicability of the questionnaires. Sixty ESL students enrolled in an

Intensive English language program were the respondents in the pilot study. Both the instruments showed very high reliability indices:

Instrument	Cronbach Alpha's Reliability Index	Number of Items
Needs Analysis Questionnaire	0.91	57
Multimodal and Language Proficiency Questionnaire	0.98	85

4.6 Summary

The methods undertaken in a particular research study are influenced by the intent and decision of the research investigation. The study design for the present research study is based on a triangulation mixed method design. This design is chosen for the investigation because it allows both the collection of qualitative and quantitative data simultaneously. The collection of both types of data complement each other in providing answers to the Research Questions. In designing the study, emphasis is also given to the statistical procedures that enable the optimal analysis of the collected data so that models can be tested and inferences made.

This study is designed on the basis that language proficiency, needs assessment, and learning language communication skills through the use of multimodal texts are causally related. The Causal Framework presented in Chapter 3 guides the investigation of the relationships that are tested through causal models. In order for the testing of models to occur, the collection of data is required. Hence, the selection of a research site and samples are necessary. The *Universiti Pendidikan Sultan Idris* (UPSI), a university that is located in Tanjong Malim, Perak is the site for this research study. UPSI is chosen as the research site for many reasons, one of the most important being, that it enables the investigation of a phenomena in a natural setting, namely, the CE1 course. In addition, ease of access is another reason that influences the selection of this particular research site. The samples for this study are students who enrol for the CE1 course. A total of 400 students out of 1,300 are chosen to participate in this study through purposeful sampling. Purposeful sampling is specifically employed in the selection of the present research study's samples because it allows the selection of information-rich cases who permit the investigation of issues that are of central

importance to this study. Data are collected through various methods. Besides administering two questionnaires and the English proficiency test on three occasions, some students are also interviewed. For the interview however, only 13 students are chosen so that data can be collected as effectively as possible in the limited period of time available in this research study.

It is important that sound and appropriate data analysis techniques are employed once the data are collected. Various statistical procedures such as Confirmatory Factor Analysis (CFA), Path Analysis, Rasch Scaling analysis and Structural Equation Modelling (SEM) as well as Hierarchical Linear Modelling are used to analyze the data. These statistical procedures are employed to analyse data because of their various strengths. CFA provides for the confirmation of whether a set of variables reflect a construct. Path Analysis allows the building of a causal model that is compatible with the observed data. Analysis of this causal structure can be carried out according to the nature of investigation. SEM allows the identification of both direct and indirect relationships among the latent variables used in the research study. HLM enables the identification of relationships at student level as well as between occasions. It is hoped that the use of all these statistical procedures result in clear and concise findings from which inferences can be made. In addition to statistical procedures, data collected from interviews and an open-ended questionnaire are examined by writing a case analysis for each key participant and then conducting a cross-analysis between the participants.

As the student respondents of this research study are heterogeneous, it is also important to describe their characteristics as these characteristics may influence the English language learning procedures of the students, namely, English language proficiency, learning needs, and learning language communication skills through the use of multimodal texts. It is found that the students are a highly heterogeneous group because of characteristics such as: (a) different ages, (b) gender, (c) ethnicity, (d) State of origin, (e) faculty, and (f) family language background. Although, these characteristics may or may not have bearings on the final analysis, a description of students' characteristics provides a clearer picture of the students involved in this research study. However, the procedures used for the selection necessarily resulted in a lack of balance on certain characteristics such as faculty and ethnicity.

Chapter Five

Problems of Scaling and Measurement

Keeves and Masters (1999, p. 5) argued that only if the characteristic of a variable or its relationship with other variables were specified accurately and meaningfully, then "the quantities that are obtained as measures of two or more objects or events can be compared". This study seeks to accomplish this by validating the Needs Analysis as well as the Multimodal and Language Proficiency Questionnaires (refer to Appendix 7.1 and Appendix 7.4 for a detailed description of the procedures employed). A summarised description of the process is discussed in this chapter and Chapter 7. The validation is carried out so that the variables can be specified accurately and meaningfully. In the validation process and the analyses carried out, it is found necessary to transform raw scores into scaled scores and measures. Additionally, choices must be made with regard to the type of analysis the data is subjected to, based on the values recorded on the employed scale or the measurements made. Most importantly, it is necessary to consider the treatment of missing data. Since all these choices contribute significantly to this study, they are discussed in the following sections of this chapter.

5.1 Measurement

Measurement generally implies some kind of linear continuum and when applied to academic settings, it is often necessary to transform a qualitative variable into an interval scale of some kind (see Thurstone, 1959). According to Thurstone (1959) measurement implies the reduction or restatement of the attribute measured to an abstract linear form with an interval scale. Rasch (1953 cited in Wright and Linacre 1989, p. 2) argued that a measure should maintain its quantitative property irrespective of the specific context in which the measurements were made. Rasch advocated that, regardless of the context in the field of education, it was probable that "the more able the person, the more likely a success on any item; the more difficult the item, the less likely a success for any person". Rasch also argued

that measurement involved probabilities and statistical processes that were independent of the particular cases and the particular events concerned.

In this study it is considered necessary to scale aspects of learning needs, English language proficiency levels and multimodal and language proficiency. The identification of conditions or events worth counting must be initiated. Existing instruments are employed in this study rather than designing new ones on the grounds that, subsequent comparisons with other students can be made. The next section discusses scales and measurement.

5.2 Scales and Measurement

Dawis (1987, p. 1) defined a scale as "a collection of items, the response to which are scored and combined to yield a scale score" and scale scores can be categorized according to level of precision. Typically, there are four types of scales: nominal, ordinal, interval and ratio. These scales can be defined and based on empirical operations. The nominal scale is perceived to be the lowest level of scaling and it is used to "name or designate the classification categories to which the objects …are grouped" (Dawis, 1987, p. 1). The ordinal scale according to Dawis, has the capacity to identify the characteristics of greater or lesser. It is also able to assess magnitude. The ordinal level scale scores "rank order the objects along the classificatory dimension" (Dawis, 1987, p. 1). If the capacity of determining equality of intervals or differences is maintained by the interval scale, then this scale can assess magnitude. The interval level scale scores reflect the relative distances between and among objects. Finally, the ratio scale possesses the capacity to identify the equality of ratios. Magnitude with equal intervals as well as an absolute zero are properties of the ratio scale.

Salkind (2006) asserted that in any research study the variables under investigation might use any one of these scales and, the more accurate the scale, the more precisely the scaling process would lead towards assessing more accurately the quality of interest. There are four types of scales employed in the present research study: nominal , ordinal, interval and ratio. A nominal scale is used for the following variables: 'gender', 'ethnicity', 'state', 'faculty' and 'family language background'; whether English-speaking or non-English speaking. An ordinal scale is used for the five-point Likert-type responses in the

questionnaires. The Rasch scaled scores are estimated on an interval scale and involve measurement. A ratio scale is used for the variable 'age'.

Bond and Fox (2005) criticized many traditional definitions of 'measurement' because they lacked additivity. These researchers asserted that most studies generally summed up Likert-type responses and treated them as scores that were later subjected to statistical procedures. 'Measures' according to Bond and Fox (2005) had to be objective abstractions of equal units. They should be reproducible and be additive. Measurement instruments had to be created and units calibrated. Rasch Measurement allowed the construction of

> objective, additive scales by transforming raw data into abstract equal-interval scales. Equality of intervals is achieved through log transformations of raw data odds and abstraction is achieved through probabilistic equations.
>
> (Bond & Fox, 2005, p. 5)

Published writings indicate that scores obtained with the Rasch model using the logistic function one parameter model are formed on a scale that is independent of the items and persons employed to calibrate the scale and are thus considered to satisfy the requirements of measurement. The advantage of employing the logistic function and $\exp(\beta_n - \delta_i)$ in the Rasch model is that the terms for person ability and item difficulty are additive and the subsequent mathematics is greatly simplified. This study employs Rasch Measurement wherever possible because change is examined between occasions and this requires an interval scale across the range of scale values involved. In addition to this, Rasch Measurement also makes automatic allowances for missing data as the measurement is independent of the persons and items that are used to calibrate the scale.

5.2.1 Types of Variables

Variables can be characterized as being 'continuous' or 'count' variables. Salkind (2006, p. 104) asserted that a continuous variable "is one that can assume any value along some underlying continuum". In the present research study the following variables are considered to be continuous variables: 'age' and 'English Proficiency test scores'

A count variable is "one with values that can be placed only into categories that have definite boundaries" (Salkind, 2006, p. 104). 'Gender', 'ethnicity', 'state', 'faculty' 'family background' as well as 'MUET level' are count variables in the present study. Moreover, the scores obtained on a test are dichotomous responses to a test item and involve counts.

5.3 Scores

The resulting counts, under conditions and events that are identified as worth counting, are sometimes referred to as 'raw scores' or 'observed scores'. The raw score is the score that is achieved by counting following an operation. It is the number of correct responses obtained. In this study, the raw scores involve counting the students' responses on a questionnaire as well as their achievement in the English Proficiency Test. All scores must take into consideration the measurement errors that arise in the testing situation, as well as the probabilistic value of the characteristic under survey.

According to Bond and Fox (2005), when raw scores or percentages were used to measure performance, students were clumped in the middle, thus not discriminating between performances levels. Raw scores were used imperfectly to convey the meaning of distance when all they did was to use counts to order the students or items (Bond & Fox, 2005). A procedure needed to be employed so that the size of the gap between the scores could be interpreted accurately and students could be compared with each other meaningfully. Bond and Fox advocated that raw scores needed to be transformed from an ordinal scale to the Rasch scale that was a more useful interval scale referred to as the 'log odds' scale or a scale that involved the use of the logarithmic transformation of the odds of success. Bond and Fox (2005, p. 26) asserted that with the logarithmic transformation

> the scales for plotting the person and item location approximates an interval scale whereby the value of the scale is maintained at any position of the scale. It is only with the interval scale that we can begin to say how much more able one student is from another.

According to Bond and Fox (2005), more recently Warm's Weighted Likelihood Estimates have been used in international studies such as the PISA to provide even better estimates of scores. Fisher (1922) (see *Rasch Measurement Transactions* 2007, p. 1118)

proposed the idea of 'likelihood' for use with "the data given a statistical model that is hypothesised to have generated those data and a set of parameter estimates". Maximum Likelihood Estimation (MLE) is the process that maximizes the likelihood that the observed data would have been generated and it corresponds to the mode of the likelihood function (Rasch Measurement Transactions, 2007). However, Warm (1989) contended that these estimates were biased. Warm's estimates were called Weighted Likelihood Estimates (WLE). Published writings indicated that the WLE was more computationally intensive. Furthermore, Wang and Wang (2001) asserted that WLE scores were more accurate than MLE when a polytomous IRT model was used. Warm's (1989) WLE method was believed to be useful because it not only reduced the bias of MLE estimates, but also reduced the standard error of these estimates (see Wang & Wang, 2001). Wang and Wang (2001) asserted that bias could systematically affect the precision of the cut scores and consequently the validity of the classification decisions. In the present study, raw scores were transformed into measures by employing the Rasch Model's Weighted Likelihood Estimates (WLE).

5.4 Scaling Procedure

Rasch scaling was defined by van Alphen et al. (1994, p. 97) as "the development of systematic rules and meaningful units of measurement for quantifying empirical observations". There should be no confusion between the terms 'test' and 'scale'. A questionnaire which is a test only becomes a scale when "a set of possible values have been assigned during the assessment process and have an explicit assignment rule" (van Alphen et al., 1994, p. 197). The Rasch Model is involved in a conjoint approach to scaling which permits the simultaneous scaling of both stimuli and subjects. The reason for employing the Rasch Model in the present study is that it allows the scaling of both the subjects and items on the same continuum (van Alphen et al., 1994) and, as a consequence, enables measurement to be recorded in so far as the scale values that are estimated are independent of the cases and items employed in calibrating the scale. Furthermore, the Rasch scale is a "statistically proven interval scale and is to be preferred" (van Alphen et al., 1994, p. 2003). Most importantly, the Rasch scale enables specific objectivity, which means that "item parameters are the same within any sub-population for which Rasch homogeneity is established" (van Alphen et al., 1994, p. 200). Wright (2008) affirmed that "objective measurement depended

on measuring instruments which functioned independently of the objects measured. This required a response model for calibrating their functioning which could separate the effects of instrument and object" (p. 85). According to Wright

> Rasch models are practical realisations of fundamental measurement when data can be selected and organised to fit a Rasch model, the cancellation axiom of additive conjoint measurement is satisfied, a perfect Guttman order of response probabilities and hence of item and person parameters is established, and items are calibrated and persons measured on a common interval scale. (p. 85)

Additionally, the logit scale employed in Rasch measurement does not have a limited and specific range of values, but theoretically ranges from minus infinity to plus infinity. Large negative values usually meant low ability or difficulty and large positive values usually meant high ability and difficulty. A person with an ability of zero logits is more able than a person with ability of -1 logit and is less able than a person with ability of 1 logit.

In the present study, the measurement procedure commenced by tabulating and counting the responses of persons to the items of the questionnaire. Then the estimation of parameters was carried out. However, it was necessary to test the fit of the model with the sample data. The examination of fit indices tested whether the data had good measurement properties (van Alphen, 1994, p. 199). Each item, as well as response to that item by a person, was considered as a source of information and the term involving person ability (β) minus item difficulty (δ), namely ($\beta - \delta$), became the quantity employed in the measurement process.

5.5 Missing Values

Problems normally arise in the handling of missing data. In the present study, it was necessary to decide how to handle missing data. Previous research had identified many techniques that could be employed in the treatment of missing data. Two of the more popular ones are 'listwise deletion' and 'pairwise deletion'. According to Allison (2001, p. 6), "listwise deletion is accomplished by deleting from the sample any observations that have missing data on any variables in the model of interest and then applying conventional methods of analysis for complete data sets". Allison indicated that the listwise deletion

technique was advantageous in two ways: (a) it could be used for any kind of statistical analysis, and (b) no special computational methods were required. Allison (2001, p. 6) disclosed that listwise deletion allowed for the unbiased parameter estimates when data were 'Missing Completely at Random' or (MCAR). Moreover, he maintained that the standard errors also tended to be larger due to the availability of less information. Standard errors also tended to be larger for listwise deletion of missing data compared to when data were complete. However, when the data were not completely at random, the estimates obtained through the use of listwise deletion could be expected to be biased.

Pairwise deletion was an alternative that could be used for many linear models such as linear regression, confirmatory factor analysis and more complex structural equation models (Allison, 2001, p. 7). In this technique, cases or respondents were excluded only if they were missing data that was required for the specific analysis. They could still be included in any of the analyses for which there was the necessary information (Allison, 2001). It was suggested that if data were MCAR, pairwise deletion produced parameter estimates that were consistent. However, if the data were merely 'Missing at Random' or MAR, the estimates could be biased (Allison, 2001). Pairwise deletion was more economical because more information was utilized, hence resulting in smaller standard errors. This was, however, not recommended as an alternative to the listwise deletion because of some bias that might result if the data were MAR. However, the use of Rasch scaling provides automatically for missing data as the measurement is independent of both persons and items used to calibrate the scale.

Darmawan (2003) suggested that if the missing data were 5 per cent or less, then the use of listwise deletion was appropriate. In the present research study, the missing data were more than 5 per cent. Thus pairwise deletion of missing data was generally carried out and in some cases Rasch scaling procedures were employed.

5.6 Factor Analysis

Byrne (1998) stated that factor analysis was a popular statistical procedure for investigating relationships between measured variables and their underlying constructs. Byrne added that in this statistical procedure "the researcher studies the covariation among the observed variables more specifically referred to as manifest variables in order to gather information on a

(usually) smaller number of latent variables" (p. 4). There were two varieties of factors analysis that were available: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). In EFA, "the researcher does not know the underlying latent variable structure. Thus the focus of the investigation is directed towards uncovering the minimal number of factors that underlie the variables" (Byrne, p. 4).

In CFA "the researcher has some knowledge of the underlying latent variable structure. This knowledge is based on theory, empirical research, or some combination of both" (p. 4). Rowe (2005, p. 40) supported this by articulating that in CFA "the researcher builds a model – based on substantive grounds – to explain the relationships between indicator variates in terms of a smaller number of specified latent constructs". In the current study CFA is carried out. This procedure is employed as an existing instrument is used.

5.7 Confirmatory Factor Analysis (CFA)

CFA was chosen for the data set in the present study based on the premise that "observable variates are imperfect indicators of certain underlying, or latent, constructs" (Mueller, 1996, p. 62). In the presence of multiple observed variables that measured a particular latent variable (Mueller, 1996, p.62), it was possible to "cluster the variables in a pre-specified, theory-driven way to evaluate to what extent a particular data set confirms what is theoretically believed to be its underlying structure."

Since CFA involved "developing models to define latent variables and then establishing relationships among the latent variables" (Phakiti, 2007, p. 41), for the present study the models were tested to investigate whether a pre-specified model was consistent with the data collected through the examination of a variety of fit indices (Mueller, 1996). According to Phakiti (2007, p. 42) a hypothesised model "can be tested statistically through simultaneous analysis of the entire system of variables in order to identify the extent to which it is consistent with the data". In the present study factor models were tested so that a model "can be used to postulate relationships among variables if goodness-of-fit is adequate" (Phakiti, 2007, p. 42). When the model was specified, the researcher then "test[ed] it based on sample data comprising all observed variables in the model" (Phakiti, 2007, p. 42).

Bollen (1989 cited in Mueller 2006, p. 112) stated that "un-standardized factor loadings can be used to compare validity results across different samples, while standardized structural coefficients should be utilised when comparing the validity of different observed variables based on data from the same sample".

5.8 Rasch Measurement

Acton (2003) asserted that, unlike other more traditional techniques, Rasch measurement satisfied two conditions in order for an attribute to be measured: (a) it possessed additivity, and (b) it possessed ordinality. The Rasch model could be used to measure things such as abilities, attitudes, and personality traits. In the Rasch model the probability of a specified response was modelled as a function of person and item parameters. The Rasch Model was able to obtain measurements from categorical response data by providing a criterion for successful measurement. This statistical procedure was chosen for this research because scholars argued that this measurement model permitted a high degree of objectivity, as well as measured on an interval scale and allowed for missing data on items. This was because the Rasch scaled scores were calculated by using the calibrated items to which each student had responded. Since the calibrated scale values of the items were independent of the sample involved, it was not necessary for all students to have answered all items when the scores were being calculated.

Wright (1977, p. 97) stated that

> of all the latent trait models proposed for person measurement, the Rasch model has the fewest ingredients, just one ability parameter βv for each person v and one difficulty parameter δi for each item i. These parameters represent the positions of persons and items on the latent variable they share. They are used in the model to estimate the probability of person v succeeding on item i.

The Rasch model was a useful form of statistical procedure as it provided information about "what happens when a person responds to an item" (Wright, 1977, p. 114). Additionally, Wright suggested that it "defines the supposed causes of the response, directs how these causes can be estimated and allows estimation of how well its supposition fits the situation" (p. 114).

The Rasch measurement model comprises a family of models such as the Rating Scale Model (RSM), Poisson Model (PM), Partial Credit Model (PCM) and Item Analysis Model (IAM). For measures of polytomous response options (more than two) there are a number of models available which includes two rating scale models: "*Wright and Master's Rating Scale* model" and "*Andrich's Rating Scale* model" as well as the partial credit (Russell et al. (2002, p. 29). Russell et al. (2002, p. 29) explained that "*Wright and Master's Rating Scale* Model assumed that the relative step difficulties within items are equal across items where *Andrich's Rating Scale* model assumes that step difficulties are constant within items". The present research study employed *Wright and Master's Rating Scale* model for the validation procedures. The Rating Scale Model (RSM) was generally utilized to analyse Likert-type data (Smith et al., 2008). Smith et al. affirmed that the RSM described the relationship between item difficulty (δ) and person ability (β). Additionally, they implied that

> thresholds are derived for each adjacent response category in a scale. In general, for *k* response categories, there are *k*-1 thresholds. Each threshold has its own estimate of difficulty (Fk). The RSM describes the probability, Pni of a person with ability βn' choosing a given category with a threshold Fk and item difficulty δi. A single set of thresholds is estimated for all items in a scale.
>
> (Smith, 2008, p. 3)

According to Masters (1982, p. 105), RSM is obtained

> by resolving the general item parameter δ_{ij} in Equation (1) into two components: one for item i, and one associated with the transition between response alternatives j – 1 and j:
>
> $$\delta_{ij} = \delta_i = \tau_j \qquad (1)$$
>
> The rating scale model is obtained by substituting $(\delta_i + \tau_j)$ for δ_{ij} in equation (1):
>
> $$P_{nit} = \frac{1}{1 + \sum_{k=1}^{m} \exp \sum_{j=1}^{k} (\beta_{n-\delta_i-\tau_j})} \quad for\ x = 0 \qquad (2)$$
>
> $$= \frac{\sum_{j=1}^{t} (\beta_{n-\delta_i-\tau_j})}{1 + \sum_{k=1}^{m} \exp \sum_{j=1}^{k} (\beta_{n-\delta_i-\tau_j})} \quad for\ x = 1,2,...m \qquad (3)$$

> When this model is applied, a single location δ_i is estimated for each item and *m* parameters $\tau_1, \tau_2, \ldots, \tau_m$ are estimated for the *m*+1 response alternatives provided with the questionnaire (Masters, 1982, p. 105).

The validation of the Needs Analysis and Multimodal and Language Proficiency Questionnaires was undertaken with the Rating Scale Model (RSM) which was an extension of the Rasch model, expanded to analyse ordered response categories. ConQuest software was employed to conduct the analysis. Smith et al. (2008, p. 3) suggested that the RSM "is commonly employed to analyse Likert-type data…it describes a probablistic relationship between item difficulty (δ) and person ability (β)". Additionally Smith et al. (2008, p. 3) added that the RSM

> describes the probability, P_{ni} of a person with ability β_n choosing a given category with a threshold F_k and item difficulty δ_i. A single set of thresholds is estimated for all items in a scale.

5.9 Summary

Measurement is an important aspect of any research study. Consequently, three important ideas are measured in the present research study, namely, (a) English language proficiency, (b) learning needs, and (c) learning language communication skills through the use of multimodal texts. Since the variables under investigation may use any one of the following scales: (a) nominal, (b) ordinal, (c) interval, and (d) ratio, it is very important to ensure the accuracy of the scales used in a research study. This is because the more accurate a scale is, the more precise the scaling process that leads towards assessing, more accurately, the quality of interest. In the present research study all of the four scales listed above are employed. Additionally, it is also important to ensure that the measures used in a study are reproducible and are additive. This can be achieved through the design of measurement instruments and calibration of units. Rasch Measurement is employed in the present research study because it allows the construction of objective, additive scales by transforming raw data into equal-interval scales. Moreover, Rasch Measurement also makes automatic allowances for missing data as the measurement is independent of the persons and items that are used to calibrate the scale.

The types of variables used in a study can be classified as continuous or count variables. In the present research study, age and English proficiency test scores are classified as continuous variables. Gender, ethnicity, State, faculty, family language background and MUET are count variables. Once data are collected under the conditions and events that have been identified as worth counting, the research study now has 'raw scores' or observed 'scores'. These 'raw scores' can be transformed into a more useful interval scale referred to as 'log odds' scale. Many procedures can be employed to transform the 'raw scores' such as MLE and WLE. In the present research study, Warm's (1989) WLE are used because these estimates are said to be more accurate than maximum likelihood estimates when polytomous IRT models are used. It is also contended that WLE reduces the standard error of the estimates.

A questionnaire's responses can be scaled when values are assigned during the assessment or scoring process. Hence, in the present study, Rasch scaling is employed as it allows the scaling of both the subjects and items on the same continuum. Most importantly, the Rasch scale enables objectivity which means that item parameters are the same within any sub-population for which Rasch homogeneity is established. Rasch scaling also provides automatically for missing data as the measurement is independent of both persons and items used to calibrate the scale. Finally the use of appropriate statistical procedures at each stage of analysis is important as each has its own meanings, strengths and weaknesses. For the present research study, a limitation of one analytical procedure is overcome by the use of another.

Chapter Six

Problems of Analysis

6.1 Examining Causation

6.1.1 Path Analysis

Path analysis refers to a system of relationships that are linear, additive and causal. Lord (1969) stressed that path analysis operated on the principle that variables were measurable on an interval scale and latent variables were hypothetical variables, which then were conceived as continuous. Furthermore Lord (1969, p. 3) explained that

> in such systems of relationships, a subset of the variables is taken as linearly dependent on the remaining variables, which are assumed to be pre-determined. The total variation of the predetermined variables is assumed to be caused by variables outside the set under consideration. This type of variable may be referred to as exogenous. The exogenous variables of a particular set may be correlated among themselves; however the explanation of their inter-correlation is not a problem for the system under consideration. The remaining subset of variables (which may consist of only one variable) is taken as dependent and may be termed as the endogenous variable(s). The total variation of the endogenous variable is assumed to be completely determined by some linear combinations of the variables in the system.

Lord (1969, p. 3) further added that the above-mentioned principle allowed a particular endogenous variable

> to be dependent on both exogenous and other endogenous variables in the system. But since any other endogenous variable on which a given endogenous variable is dependent is, in turn dependent on either exogenous or both exogenous and endogenous variables, the given endogenous variable is ultimately determined by the exogenous variables in the system.

Li (1975, p. 3) suggested that path analysis was "concerned with erecting a causal structure compatible with the observed data" and "it depends on the purpose or viewpoint of the investigator; his viewpoint leads to the formulation of a 'causal scheme' and the analysis will be made accordingly".

Partial Least Squares (PLS) path analysis is a procedure for the analysis of systems of measured and latent variables. Sellin and Keeves (1998) asserted that the partial least

squares (PLS) technique was not well-known but had many advantages. One important advantage was that "no assumptions need to be made about the shape and nature of the underlying distributions of the observed and latent variables" (Sellin & Keeves, 1998, p. 1). These researchers stressed that this characteristic of PLS permitted

> the analysis of data of dichotomous variables that are not associated with an underlying continuous distribution, which is a distinct advantage for a variable such as sex of student, or for the use of variables to represent countries in cross-national comparative studies.

The PLS PATH model was specified by Sellin and Keeves (1998, p. 2) as

> two sets of linear equations, called the inner model and the outer model. The inner model specifies the hypothesized relationships among latent variables (LVs), and the outer model specifies the relationship between LVs and observed or manifest variables (MVs).

Lord (1969) stressed that Wright (1921; 1934; 1960a) developed the notion of a path diagram. According to Lord (1969, p. 3) path diagrams were developed to "provide a convenient representation of the systems of relations". Loehlin (1998, p. 2) reiterated this idea when he declared that path diagrams were "an easy and convenient representation of the relationships among a number of variables". Loehlin also affirmed that path diagrams had the ability to indicate the "relative strength of a correlation or causal influence". The steps of constructing and solving path diagrams are referred to collectively as path analysis (Loehlin, 1998, p. 9). Lord (1969, p. 4) emphasized that path diagrams were drawn according to the following conventions.

(1) The postulated causal relations among the variables of the system are represented by unidirectional arrows extending from each determining variable to each variable dependent on it.

(2) The postulated non-causal correlations between exogenous variables of the system are symbolized by two-headed curvilinear arrows to distinguish them from causal arrows.

(3) Residual variables are also represented by unidirectional arrows leading from the residual variable to the dependent variable.

(4) The quantities extended beside the arrows on a path diagram are the symbolic or numeral values of the path and correlation coefficients of the postulated causal and correlational relationships.

Loehlin (2005, p. 14) suggested that all variables in path diagrams could be classified into two categories: (a) those that did not receive causal inputs from any other variable in the path diagram, and (b) those that received one or more such causal inputs. Loehlin (2005, p. 4) emphasised that "Variables in the first category are referred to as exogenous, independent or source variables. Variables in the second class are called endogenous, dependent or downstream variables".

Sellin and Keeves (1998) affirmed that although PLS had many advantages as a statistical technique for identifying the causal structure of a set of variables, its limitation was that it could not model measurement errors. This was an important issue that an investigator should be aware of because

> measurement error in the exogenous variables can bias the estimates of parameters that are made. Measurement error in the endogenous variables reduces the variance explained and in so far as the standard errors of the estimates are taken into account, they are larger than would be expected.
>
> (Sellin & Keeves, 1998, p. 9)

However, PLSPATH provided for the formation of latent variables from observed variables as well as for the reflection of latent variables on variables that were observed. Thus both reflection and formation could be built into to the relationships between latent and observed variables (Sellin & Keeves, 1998).

6.1.2 Structural Equation Modelling (SEM)

Published writings have emphasized that SEM was a statistical procedure employed in the multivariate analysis of a structural theory on some phenomenon (Byrne, 1998). Tuijnman and Keeves (1998, p. 1) asserted that SEM involved

> a set of mathematical equations employed to formulate the structural relations which are hypothesized to exist between a network of observed and latent variables, and the model is tested to estimate the extent to which it accounts for the covariation between the observed measures.

Tuijnman and Keeves (1998, p. 2) stressed that the use of causal models such as SEM enabled the specification of

> interrelations between variables so that appropriate statistical control can be employed...it makes explicit the interrelations between variables that are derived from theory…subsequently, it permits the teasing out of a complex network of effects, together with estimating the magnitudes of effects, that can be considered to operate in a particular problem situation in educational inquiry.

Bryne (1998, p. 1) highlighted that SEM conveyed "two central concepts: (a) causal processes under study are represented by structural (regression) equations, and (b) the structural equations can be modelled pictorially to enable a clearer conceptualization of the theory under study".

The advantages that SEM had over other traditional statistical procedures were that SEM could be employed for explanatory purposes while the other procedures were more descriptive in nature. Additionally, SEM also allowed for the examination and the estimation of measurement errors, a characteristic that was not possible in other traditional statistical techniques (Byrne, 1998). Byrne (1998) also asserted that traditional statistical techniques could only be employed with observed measurement, but SEM provided for the examination of both observed and unobserved variables. Published writings had emphasized that research workers often wanted to study theoretical constructs that could not be observed directly and this was made possible by SEM.

6.1.3 Confirmatory Factor Analyses

In the current study, a decision was made to use the LISREL8.0 software (Joreskog and Sorbom, 1993) to conduct confirmatory factor analysis. Sellin and Keeves (1998) contended that the LISREL series of programs were associated with normal theory estimation and employed both maximum likelihood estimation procedures, and generalized and weighted least squares procedures. Byrne (1998, p. 6) emphasized that

> the measurement model defines relations between the observed and unobserved variables…it provides the link between scores on the measuring instruments (i.e. observed indicator variables) and the underlying constructs they are designed to

> measure (i.e. the unobserved latent variables). The measurement model then specifies the pattern by which each measure loads onto a particular factor.

Joreskog and Sorbom (1993, p. 113) reiterated these views when they stated that

> the testing of structural models, i.e. the testing of the initially specified theory, may be meaningless unless it is first established that the measurement model holds. If the chosen indicators for a construct do not measure that construct, the specified theory must be modified before it can be tested.

In the present research study, the relationship between the manifest and latent variables must first be adequately estimated before the latent variable relationships are examined. The procedures involved in confirmatory factor analyses are used in the estimation of the latent variables that are incorporated into the structural equation models. However, confirmatory factor analyses can only estimate models in which the manifest variables reflect a latent variable. Where the manifest variables form the latent variables, confirmatory factor analyses cannot be used. However, partial least squares regression procedures can be used to obtain estimates of the latent variables in those circumstances.

6.2 Analysing Change

6.2.1 Hierarchical Linear Modelling

Hierarchical or nested data structures are common in educational research. The school for instance, is an organizational structure that is comprised of clusters of students, peers, teachers, classrooms, families and others. In a research study, these data must be considered as multilevel or hierarchical data. Bryk and Raudenbush (1992) have drawn attention to two other types of hierarchical data structures: (a) repeated measures data, and (b) meta-analytical data. Raudenbush and Bryk (2002) stressed that hierarchical data structures were also present in developmental research where multiple observations were obtained over time. In the case of meta-analytical data, "an investigator may wish to discover how differences between studies in treatment implementations, research methods, subject characteristics and contexts relate to treatment effect estimates within studies" (Raudenbush and Bryk, 2002, p. 3). These researchers explained that in this particular instance the subjects under investigation might be nested within studies, and hierarchical or multilevel modelling provided the statistical framework to study research issues.

Raudenbush and Bryk (2002) asserted that, in the past, hierarchical data structures had been neglected because of the limitations of conventional statistical techniques for the estimation of linear models with nested structures. These limitations had often contributed to aggregation bias, mis-estimated precision, as well as the unit of analysis problem (Raudenbush & Bryk, 2002). In addition, treating hierarchical data structure as single level data could result in the production of "standard errors that are too small in ordinary least squares regression analysis (unless these so-called design effects are incorporated into the analysis). In turn, this leads to a higher probability of rejection of a null hypothesis" (Osborne, 2000, p. 1).

Raudenbush and Bryk (2002) suggested that Hierarchical Linear Modelling (HLM) could overcome such limitations. Furthermore, they claimed that

> with hierarchical linear modelling we can pose hypotheses about relations occurring at each level and across levels and also across the amount of variation at each level. The term hierarchical linear models have been adopted because it conveys an important structural feature of data that is common in a wide variety of applications, including studies of growth, organization effects and research synthesis.
>
> (Raudenbush & Bryk, 2002, p. 6)

Hox (2002) explained that HLM allowed the variables to be defined at any level of hierarchy. Some of these variables might be measured directly at their own level while others could be moved from one level to another by 'aggregation' (Hox, 2002). Hox (2002, p. 2) clarified the idea of 'aggregation': aggregation meant that the variables at a lower level were moved to a higher level. Hox (2002) referred to Goldstein (1986; 1989) when he indicated that though the lowest level (Level 1) usually involved individuals, in longitudinal research studies, repeated measures within individuals could also be specified at the lowest level.

Osborne (2002, p. 2) explained that the basic concept behind hierarchical modelling was similar to that of ordinary least squares (OLS) regression. Osborne described that on the

> base level (usually the individual level, referred to here as level 1), the analysis is similar to that of OLS regression: an outcome variable is predicted as a function of a linear combination of one or more level 1 variables, plus an intercept, as so

$$Y_{ij} = \beta_{0j} + \beta_{1j}X_1 + \ldots + \beta_{kj}X_k + r_{ij}$$

where β_{0j} represents the intercept of group j, β_{1j} represents the slope of variable X_1 of group j, and r_{ij} represents the residual for individual i within group j. On subsequent levels, the level 1 slope(s) and intercept become dependent variables being predicted from level 2 variables:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}W_1 + \ldots + \gamma_{0k}W_k + u_{0j}$$
$$\beta_{1j} = \gamma_{10} + \gamma_{11}W_1 + \ldots + \gamma_{1k}W_k + u_{1j}$$

and so forth, where γ_{00} and γ_{10} are intercepts, and γ_{01} and γ_{11} represent slopes predicting β_{0j} and β_{1j} respectively from variable W_1. Through this process, we accurately model the effects of level 1 variables on the outcome, and the effects of level 2 variables on the outcome. In addition, as we are predicting slopes as well as intercepts (means), we can model cross-level interactions, whereby we can attempt to understand what explains differences in the relationship between level 1 variables and the outcome.

(Osborne, 2002, p. 3)

Hox (2002) argued that investigators of multilevel data structures should be aware that there was no optimal level at which data ought to be analysed as all levels were equally important in their own particular way. Investigators ought to analyse data with the aim of examining "the direct effect of individual and group level explanatory variables and to determine if the explanatory variables at the group level serve as moderators of individual-level relationships" (Hox, 2002, p. 4).

6.3 Summary

The data from exploratory studies are best analysed by employing different approaches. This is to overcome the limitations of employing a particular analytical technique as well as to complement the weakness of each statistical procedure with the strength of another. In the present research study statistical procedures are needed to examine causation and analyse change. The examination of causation is carried out with Path Analysis and Structural Equation Modelling. The analysis of change is carried out with Hierarchical Linear Modelling (HLM). Path analysis is employed in this research study because it is technically simple, provides quick or instant estimation and does not require stringent distributional

assumptions, such as observational independence and normality of residuals. Additionally, Path analysis allows the investigation of both observed or manifest variables (MVs) and unobserved or latent variables (LVs). In the present study, there is a need to identify the relationship between MVs and LVs as well as LVs and LVs. Most importantly, Path analysis allows the identification of whether the latent variable is formed in the 'inward mode', or reflected in the 'outward mode', or involves the 'unity mode'.

SEM is employed in the present study because it is a statistical procedure that can be used for explanatory purposes as well as for the examination and estimation of measurement errors. This property of SEM is not available in other traditional statistical procedures. Moreover, SEM allows the examination of variables that cannot be directly observed. Since the present research study involves the investigation of both observed and unobserved variables, SEM is an appropriate statistical procedure to use. In the present research study, the relationships between the manifest and latent variables are estimated before the latent variable relationships are examined. This procedure is carried out with Confirmatory Factor Analysis (CFA). CFA enables the estimation of the latent variables that are incorporated into the structural equation models.

In addition, the analysis of change in the present research study is carried out with HLM. HLM is employed in the present study because of the longitudinal and the nested nature of the data structure. Other traditional statistical procedures are often not able to carry out analysis on longitudinal level data. If the hierarchical data in the present study are treated as single level data, the findings are inappropriate. Variables can influence other variables through mediating or moderating effects. The former can be investigated with indirect effects in Path Analysis and the latter with cross-level interaction effects in hierarchical linear modelling. Additionally, as each Research Question needs to be answered differently, appropriate statistical procedures have to be employed. This yields findings from which clear inferences can be made.

Chapter Seven

Collecting Information and Data

In this study two established questionnaires and an English Proficiency test are chosen both to answer the research questions as well as to gauge the language proficiency, attitudes and views of the respondents. Both quantitative and qualitative data are examined. Quantitative data are obtained through the administering of a Needs Analysis and Multimodal and Language Proficiency Questionnaires and an English Proficiency Test. The Needs Analysis Questionnaire is administered at the start of the course. Data from the Multimodal and Language Proficiency Questionnaire in addition to the English Proficiency Test are obtained at three stages in the study: at the beginning, the end, and three months after the respondents had finished the course. Qualitative data are collected through in-depth semi-structured interviews, documents and through open-ended written statements. These instruments are discussed in the following sections.

7.1 Background of Questionnaires

7.1.1 Needs Analysis Questionnaire

Xiao's (2003) Needs Analysis questionnaire (refer to Appendix 5.1) is employed in this study because it asks a comprehensive list of questions with regard to learners' perceptions of their needs. Furthermore, the review of research in Chapter 2 suggests that the themes incorporated in the questionnaire are highly relevant for this study. The questionnaire is divided into the following sections: (a) personal information, (b) academic and professional qualifications, (c) 57-items involving the learner's perceptions of needs, (d) language skills, and (e) needs and expectations. In Section E (1), the respondents are asked to outline their perceived needs and expectations of the course based on their ranking of the skills that they perceive as needing training most. Respondents are also given the opportunity to clarify their reasons for enrolling in the CE1 course, in Section E (2). It is expected that these items in the questionnaire will elicit enough data to provide a clear indication with regard to the language learning behaviours of the undergraduates enrolled in the CE1, as well as their perceived needs and expectations. The Needs Analysis Questionnaire is described in greater detail in the sections that follow.

Who are the learners?

In this section, information about the learners' personal information such as age, sex, nationality, socio-cultural background and their command of subject knowledge is sought. The learners' occupational as well as educational goals are also examined. Additionally, learners' attitudes towards the target language and culture, are investigated. Section A of the questionnaire in the present study seeks respondents' personal information. The factor 'culture and learning' is introduced to investigate items in relation to cultural learning in language learning.

Why are the learners taking the course?

Information is collected in the questionnaire about the learners' purposes for doing the course, since their expectations, attitudes and motivations for doing the course can influence their learning outcomes. This information also illustrates the nature and strength of the learners' motivation to enrol in the course (Brindley, 1984; Hutchinson and Waters, 1987; Munby, 1978). In the current research study, specific items in the questionnaire are selected to investigate the respondents' nature and strength of motivation.

How do the learners learn?

Since it is desirable that course designers also endeavour to obtain information about the learners' learning backgrounds, preference for learning and teaching approaches, learning styles, strategies and learning techniques, a series of questions are asked in order to obtain the relevant information. This section investigates factors such as group work and communication, learning styles and strategies, teacher-centred approaches and student-centred approaches.

Difficulties encountered in the learning process?

The learning needs assessment also seeks to identify the constraints and difficulties faced by learners, particularly with regard to resources, opportunities to practise the target language and approaches to teaching and learning. This section also seeks information on the cognitive and linguistic challenges that learners face in a particular setting. The factor 'difficulties encountered in the learning process' is used to investigate this aspect in the current research study.

7.1.2 Multimodal and Language Proficiency Questionnaire

The Multimodal and Language Proficiency Questionnaire (refer to Appendix 5.2) that is adapted from the Language Centre, Hong Kong University of Science and Technology's Needs Analysis Questionnaire is used to collect data for this study. Although this questionnaire is entitled 'Needs Analysis', it is relevant to the context of the present study which investigates the multimodal and language proficiency behaviours of undergraduates enrolled in the CE1 course. The questionnaire needed adaptation to suit the requirements of the present study and is referred to in this study as the 'Multimodal and Language Proficiency Questionnaire'. The questionnaire is categorised into six sections which are employed to investigate the respondents' personal information, entrance qualifications, types of technology used, frequency of multimodal use in English, frequency of English language use, perceptions of proficiency of multimodal use in English, perceptions of proficiency of English language use and perceptions of proficiency in every day communication. These sections are discussed in detail in the following paragraphs.

Use of Technology

Items C1-C10 in the questionnaire investigate the type of technology to which respondents of this study have access. In this section, students choose from two options of 'Yes' or 'No', as to whether or not they have a computer or laptop or notebook at home; have access to a computer or the internet in the university; have access to the internet at home; have a cell phone and the reasons for using it; and have a television set or a DVD player at home.

Frequency of Multimodal Use in English

Items D1-D29 investigate the frequency of multimodal use in English. In this section, respondents are asked how often they employ multimodal texts for everyday activities to listen, speak, read and write. Students choose from a five-point Likert-type scale response of 'Hardly ever', 'Occasionally', 'Sometimes', 'Quite often' and 'Very often'.

Frequency of English Language Use

Items E1-E9 investigate the frequency of English language use. In this section respondents respond to questions about how often they use English for university activities such as learning in the CE1 classroom, learning in their individual study programs, participation in extra-curricular activities as well as other learning-related activities. Students are asked to

choose from a five-point Likert-type scale response of 'Hardly ever', 'Occasionally', 'Sometimes', 'Quite often' and 'Very often'.

Perception of Proficiency of Multimodal Use in English

Items F1-F29 investigate students' perceptions of proficiency of multimodal use in English. In this section, information in relation to respondents' perception of their English language proficiency for activities such as listening, speaking, reading and writing multimodal texts are obtained. Respondents choose from a five-point Likert-type scale of 'Poor', 'Less than adequate', 'Adequate', 'Good' and 'Excellent'.

Perception of Proficiency of English Language Use

The respondents' perceptions of proficiency of English language use are investigated by Items G1-G9. In this section students are required to rate their English language proficiency for university activities such as learning in the CE1 classroom, their study program, extra-curricular activities, and other learning related activities. Respondents choose from a five-point Likert-type scale of 'Poor', 'Less than adequate', 'Adequate', 'Good' and 'Excellent'.

Perceptions of Proficiency in Everyday Communication

The last section in the questionnaire consists of Items H1-H9 that investigate the respondents' perceptions of their proficiency in everyday communication. In this section, students rate their English language proficiency in every day communication such as listening, speaking, reading and writing, in both print and multimodal texts.

7.2 English Proficiency Test

A proficient language user in an academic setting is able to listen, speak, read and write in various contexts for a variety of audiences, employ the appropriate language systems as well as demonstrate an awareness of the culture. More specifically, they are able to listen, comprehend and speak in linguistically complex discourses in everyday communication as well as academic settings. They are able to read various types of texts, critically and creatively, for implicit and explicit meaning. They are also able to write various types of texts coherently and cohesively, presenting their views, opinions and arguments for a variety of audiences. For the purposes of this study, the proficiency of the CE1 students is evaluated

through an English Language Proficiency Test (EPT) that assesses listening, reading and writing skills. The speaking skill is not assessed in this study (see below).

English language proficiency in universities is almost always based on learner's performance in language skills of listening, speaking, reading and writing. For the purpose of this study, existing EPT tests are employed on the premise that these instruments can be useful in gauging the levels of English language proficiency of learners enrolled in the CE1. Existing tests designed by reputable test designers are used because of time constrains. The final test comprises three sections: Section 1 - Listening, Section 2 - Reading and Section 3 - Writing (refer to Appendix 5.3). The learners' speaking ability is not assessed for two reasons: (a) permission was only granted for the research to be conducted for a limited period of time by the university where the research is undertaken, and (b) there was not enough time to train examiners to conduct the speaking test so that it met all the desirable standards of reliability and validity. Conducting a speaking test for 400 students would impose a huge time constraint on a study. Furthermore, as the overall aim of this research is solely to gauge the levels of English language proficiency at different phases of the CE1, it is necessary to focus specifically on the listening, reading and writing modalities, in order to gauge proficiency levels.

Sutton and Benseman (2006) suggested that there were five different ways of screening people with literacy difficulties: proxy measures, applied literacy tasks, self reports, guided interviews and standardised tests. Although each of these methods had their limitations, for the purpose of this study, a standardised EPT was employed to ascertain the proficiency levels of the CE1 students. This English proficiency test was indicated by past research studies to be the best form of English language proficiency assessment when large number of students were involved. Thus in this study, an English language proficiency test (EPT) was formed from two tests called 'Test for English Proficiency' designed by Educational Testing Service in the United Kingdom and the 'The Assessment Test' (2002) employed in 'The Assessment of Pupils' Skills in English in Eight European Countries'. The listening, reading and language usage sections from the 'Test for English Proficiency' designed by Educational Testing Service as well as the writing section from 'The Assessment Test' were used as the present research study's English Proficiency Test. This test was developed to be administered at the beginning, at the end, and three months after the students

have completed the CE1 course to identify the levels of proficiency at these successive stages. Four hundred students sat for this test. Furthermore, administering an existing test to ascertain proficiency levels overcame the time constraints which were a major or limiting factor in a research study. The test was employed over three occasions in order to ascertain whether a learner's proficiency level increased, remained unchanged or decreased, compared to the level on entry to the course. The test was marked using the procedures provided by the CE1 course Coordinator (refer to Appendix 1.2). The scores were analysed as raw scores as the same students sat for the same test over three occasions. This study sought to test the consequential validity of the English Proficiency Test. Hence, as was mentioned in the chapter earlier, although the use of raw scores is known to produce scores that were not on an interval scale, in order to keep as close as possible to the CE1 course procedures, Rasch scaling was not carried out on the raw scores. The instructors of the CE1 course do not subject the raw scores of the EPT to any Rasch scaling procedures. Only raw scores are used to assign grades to the students. The following sections consider the three sections of the test.

Listening Component

This section of the test comprises 21 questions that are categorised into four parts which assess students' ability to understand spoken English. In the first part of the test, students are required to view four pictures and hear short statements. They are expected to choose the statement that best describes the picture. In the second part, they hear five questions or statements, followed by three responses. They are obliged to choose the best response to the question or statement. In the next part of this section, learners listen to five short conversations between two people and then read a question about each conversation as well as make four responses. They need to choose the best response based on the conversation they hear. In the last task, students listen to three short talks and read two or more questions about each talk. They are asked to choose the best option, from four options in order to answer the question.

Reading Component

This section of the test is divided into three parts and is made up of 23 questions. The rationale for the first part of the test is to assess how well students understand written English. The seven questions in this component consist of incomplete sentences. Four words or phrases, labelled (a), (b), (c) and (d), are given beneath each sentence. Students are required to

choose one word or phrase that best completes the sentence. In the second part, students have to complete an error recognition task. Each question in this component consists of a sentence that has four words or phrases underlined. The four underlined parts of the sentence are labelled (a), (b), (c) and (d). Students have to identify one underlined word or phrase that can be corrected or rewritten. There are seven questions in this part. The final part consists of reading comprehension. The questions are based on a selection of reading materials, such as notices, letters, forms, newspaper and magazine articles as well as advertisements. Students are required to choose the one best answer, (a), (b), (c) or (d), to each question. The students are asked to answer all questions following each reading selection on the basis of what is stated or implied in that selection. There are a total of three reading tasks in this part.

Writing Component

In this section of the test, students are required to fill in what was missing in the dialogue. The dialogue involves a discussion about a film. Students need to read the whole dialogue and study carefully what is written before and after each line. If there are words printed in brackets, they must use them. In the second part of this section of the test, students are required to read the text in which there are gaps for words that are missing. They are asked to fill in the word that they think best fits in the context. Usually only one word fits, but sometimes there are several possibilities.

7.3 Interviews

Patton (1990) stated that data from interviews consisted of direct quotations about experiences, opinions, feelings and knowledge. This technique was regarded as central to investigating the impact of multimodal texts on the development of English language proficiency as this phenomenon could not be observed directly. Interviews enabled the researcher to probe the thinking of key participants. Interview sessions could focus on participants' feelings, thoughts and intentions. In this study, individual semi-structured interviews are employed to examine participants' thoughts, opinions and perceptions in regard to the CE1 course, multimodal texts and English language proficiency. The questions shown in Figure 7.1 are categorised into the following themes: (a) individual's familiarity with technology, (b) technology use in learning, (c) expectations in CE1, and (d) general evaluation of CE1 and overall program.

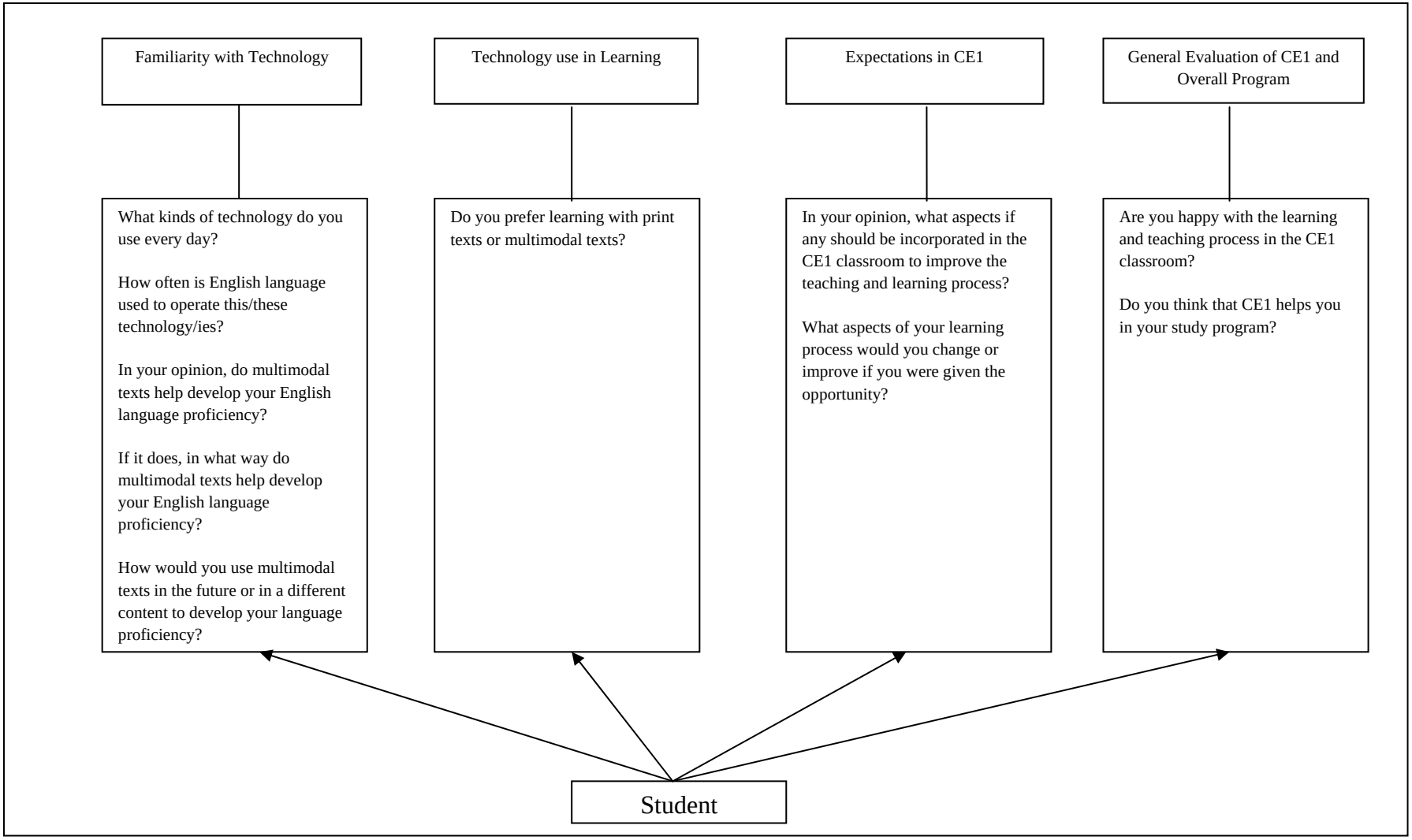

Figure 7.1. Student Interview Questions

In addition, in this study interviews are employed with the CE1 course planners to provide further evidence. The Director as well as the Coordinator of the CE1 course are interviewed to elicit information in regard to their perceptions about learner needs and the CE1. The questions shown in Figure 7.2 are categorised into the following themes: (a) history of the CE1 course, (b) aims and principles that guide the design, (c) satisfaction with learning outcomes, (d) perceptions about usage of skills learnt in CE1, outside the classroom, (e) perceptions about CE1 students, (f) perceptions about usage of print-based modules in the teaching process, and (g) views about the incorporation of multimodal texts in the CE1 teaching and learning process.

7.4 Documentation

The data collected through this method provide useful views of the CE1 classroom environment, especially which are not directly observable. Documents such as course outline, syllabus, student profiles, student assignments and teaching and learning resources are used to collect data. Data from these documents provide information on factors such as background, socioeconomic status, age, the types of texts used in the classroom, English language grades in the *Sijil Pelajaran Malaysia* (SPM) examination as well as Malaysian University English Test (MUET) band and entrance qualifications. These data help to make judgements about participants' language learning behaviours inside and outside the classroom.

7.5 Open-ended Written Statements

In this study, the members are asked to write responses to three open-ended questions or statements: (a) Are you content with the current teaching methods used by your teachers in the English classroom? (b) Outline your perceived needs and expectations of the course, and (c) Reasons for enrolling in the CE1 course. The responses are examined, and themes as well as patterns are identified. The data collected through this procedure are used to support data obtained from the interviews.

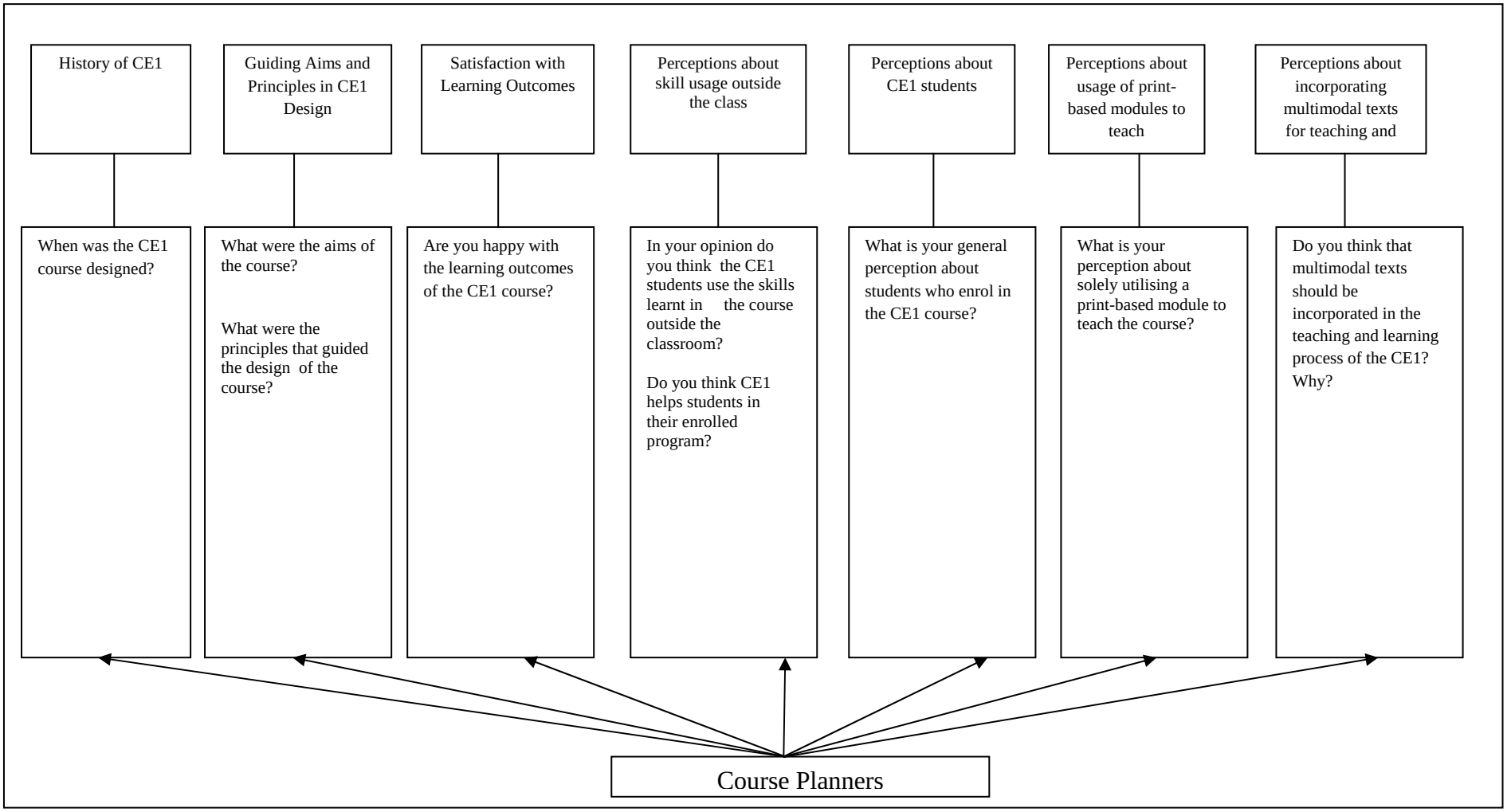

Figure 7.2. Course Planners' Interview

7.6 Validity and Reliability of Instruments

Validity and reliability are important characteristics of the instruments employed as well as central concerns of the research study. Validity is generally assessed through the yardstick of how well an instrument assesses a particular trait in a given area, under certain circumstances for a particular group (Black, 1999; Hopkins, Stanley & Hopkins, 1990). In the past, 'validity' was generally stated in terms of the extent to which an instrument assesses what it purports to assess. Current research findings stress that such a definition is lacking as it fails to take into consideration "value implications of both score meaning as a basis for action and the social consequences of score use" (Sinkinson & Jones, 2001, p. 2).

Moreover reliability cannot be defined narrowly as it encompasses many facets. A broad definition of reliability probably captures the idea of accuracy, consistency and dependability of the assessment process. However, at each stage in the hierarchical linear modelling analyses, estimates of the relationships of the assessed variables and the relationships between them are estimated and reported for consideration. For the purpose of the current study, only the Needs Analysis and the Multimodal and Language Proficiency Questionnaires are examined for validity. Messick (1998, p. 13) stated that consequential validity is

> an integrated evaluative judgement of the degree to which empirical evidence and theoretical rationales support the adequacy and appropriateness of inferences and actions based on test scores or other modes of assessment.

It is this view that was used to refrain from subjecting the EPT scores to any Rasch scaling procedures. The EPT scores obtained in the actual CE1 course are not Rasch scaled and is employed as raw scores to evaluate students' English language performance. In trying to stay as closely to the processes employed in the CE1 course, the EPT scores obtained in the present research study are also processed as raw scores. In addition, it is not the aim of the study to undertake an in-depth analysis of how respondents perform with regard to the individual items of the test. The English Proficiency Test that is used to collect data for this research study is designed by reputable test designers. Hence, a decision was made not to subject it to further external validation procedures. Nonetheless, the Needs Analysis and Multimodal and Language Proficiency Questionnaires are validated through various statistical procedures such as Confirmatory Factor Analysis (CFA) as well as Rasch Analysis. Figure

7.3 graphically shows the processes undertaken to examine the validity and reliability of these instruments utilised in this research study. Figure 7.3 gives a graphical representation that is based on an understanding of scholarly work on both validity and reliability (Hopkins et al., 1990; Weiner & Stewart, 1984).

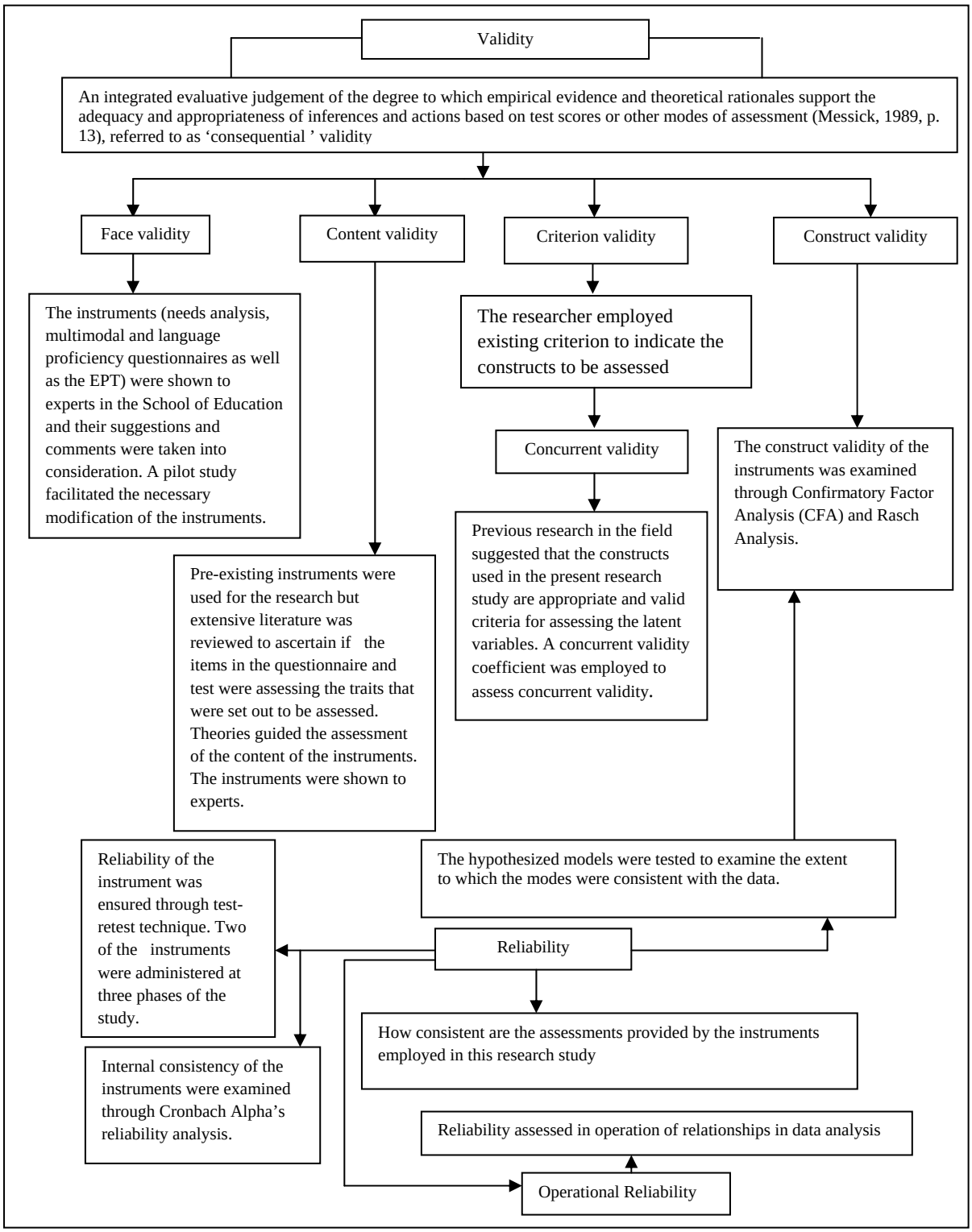

Figure 7.3. Validity and Reliability of Instruments

7.7 Validation of Instruments

7.7.1 Needs Analysis Questionnaire

Xiao's (2003) Needs Analysis Questionnaire is validated through Confirmatory Factor Analysis (refer to Appendix 7.1 for a detailed description of the processes undertaken). Confirmatory Factor Analysis (CFA) employs the comparison of several alternative structures as well as identifies if one or more of these structures are compatible with the measurement procedures used. Xiao's (2003) Needs Analysis Questionnaire is categorised into 12 factors. CFA is conducted in order to examine if the number of factors and the loadings conform to what is expected on the basis of a pre-established theory. Xiao's 12-Factor Model reflects an acceptable fit based on chi-square, degrees of freedom, RMSEA, comparative fit as well as goodness-of-fit indices. However, the factor loadings for the 12-Factor Model indicated otherwise with low as well as negative values. Only 23 out of the 57 items fell in the ±0.50 range which is the index generally used to identify if there is a strong correlation between the factors and variables. Additionally, five observed variables are not assigned to any of the factors. The communalities for the 12-Factor Model are also low with 25 out of 57 items ranging from 0.20 to 0.40.

This motivated a restructuring of the factors. Two of the items were dropped because of low factor loadings irrespective of which factor they were assigned to. Others were reassigned based on theory and published writings. The revised structure resulted in seven factors. The reliability indices for the seven factors ranged from 0.52 to 0.76. The following factor models were tested: One-Factor Model and Seven-Factor model. The One-Factor Model was tested to investigate if the items in the questionnaire were measuring just one latent variable – Learning Needs. The Seven-Factor Model was tested to identify if the seven latent variables were not a single measure, but correlated factors. The Seven-Factor Model indicated the best fit when compared with the author's 12-Factor Model and the One-Factor Model.

Two structural models: the Hierarchical Model and Nested Model were also tested. The Hierarchical Model was tested to examine if the several first order factors loaded onto a second order Learning Needs factor. The Nested Model was tested to examine if the loadings were distributed between the seven factors and also loaded uniquely to the Learning Needs factor. Although the Nested Model indicated the best fit to the sample data, the factor

loadings indicated otherwise. The Nested Model was a complex model and published writings indicated that the more complex a model, the greater the likelihood of a higher level of resulting noise. Thus on the basis of model parsimony as well as relatively similar indices, both the Seven-Factor Model and Hierarchical Model are used to guide future analyses.

Rasch analysis was also employed in the validation procedure as it examined the scaling of both the subjects and items on the same continuum and as a consequence enabled measurement in so far as the scale values that were estimated were independent of the cases and items employed in calibrating the scale. Furthermore, the Rasch scale was a "statistically proven interval scale and is to be preferred" (van Alphen et al., 1994, p. 2003). Most importantly the Rasch scale enabled specific objectivity, which means that "item parameters are the same within any sub-population for which Rasch homogeneity is established" (p. 2003). Moreover, the use of Rasch scaling provided automatically for missing data as the measurement was independent of both persons and items used to calibrate the scale. Fit indices such as the infit and outfit MNSQ, t-value, item discrimination index, item deltas as well as separation reliability were used to identify if the Rasch model was fitting the data. Rasch analysis confirmed that all the 55 items in the Needs Analysis Questionnaire should be retained because they satisfied the requirements for unidimensionality.

7.7.2 Multimodal and Language Proficiency Questionnaire

The Language Centre in the Hong Kong University of Science and Technology's (LTCFIT) Placement Facility and Needs Analysis (2006) Questionnaire was adapted to collect data for the present study and is named the Multimodal and Language Proficiency Questionnaire (refer to Appendix 7.4 for a detailed description of the validation processes undertaken). The questionnaire is categorised into 8 sections. Two of the sections are used to collect personal information and academic qualifications. The other six sections are: (a) use of technology [USETEC]; (b) frequency of multimodal texts use in English for activities in daily life [FRMENG], (c) frequency of English use for university activities [FRENGUS], (d) perception of proficiency for the use of multimodal texts in English for activities in daily life [PPFMEN], (e) perception of English proficiency for university activities [PPFENUS], and (f) perception of English proficiency for every day communication [PPFEDCM].

Confirmatory Factor Analysis (CFA) was conducted to investigate the way in which observed variables were related to particular factors. The following factor models were tested using LISREL8.0: (a) Two-Factor USETEC Model, (b) Five-Factor FRMENG Model, (c) One-Factor FRENGUS Model, (d) One-Factor PPFMEN Model, (e) One-Factor PPFENUS, and (f) One-Factor PPFEDCM Model. Three items were dropped from the Two-Factor USETEC Model. Usetec7, usetec8 and usetec9 were dropped because of low factor loadings. The factor loadings for all but the One-Factor PPFMEN Model were moderately high. The analyses for the One-Factor PPFMEN Model generated a 'positive definite warning' and hence a ridge option was used to produce the covariance matrix.

Alternative structures were also tested to find the best fit to the model. The Three-Factor NEWMPPF Model was tested to investigate if the three factors [PPFMEN, PPFENUS and PPFEDCM] were correlated. The Hierarchical Model was tested to see if the three first order factors [PPFMEN, PPFENUS and PPFEDCM] loaded onto a second order factor – Multimodal and Language Proficiency or MMLP. The Nested Model was tested to investigate if the factor loadings distributed between the three factors [PPFMEN, PPFENUS and PPFEDCM] as well as loaded uniquely onto the MMLP factor. The NEWMPPF Model indicated factor loadings which ranged from ±0.50 to ±0.80 or greater. This was an indication that there was a significant correlation between the three latent variables. The factor loadings for the Hierarchical Model were greater than ±0.50. This showed that the first order factors were loading onto a second order factor – MMLP. The factor loadings for the Nested Model were positively loading on the three component constructs [PPFMEN, PPFENUS and PPFEDCM], but were not loading positively onto a separate MMLP factor. The Three-Factor NEWMPPF Model was renamed the 'MMLP Model'.

It was decided that the Two-Factor USETEC Model, Five-Factor FRMENG Model, One-Factor FRENGUS Model, MMLP Model as well as Hierarchical Model would be used in future analyses. In addition to the CFA, Rasch analysis was conducted to validate the questionnaire at item level. Based on the infit and outfit MNSQ, t-value, item discrimination index and separation reliability, it was decided that all the items except for the three in the USETEC scale would be retained.

7.8 Summary

This chapter presents a discussion on the operationalization of instruments and techniques that are used to collect data in this research study. The two questionnaires used to collect data are described. Xiao's (2003) Needs Analysis Questionnaire is used to obtain information regarding learners' perceptions of their needs. The Needs Analysis Questionnaire investigates the following components: (a) Who are the learners? (b) Why are they taking the course? (c) How do they learn? and (d) What are the difficulties encountered in the learning process? The discussion continues with a description of the Multimodal and Language Proficiency Questionnaire that is adapted from the Language Centre, Hong Kong University of Science and Technology's Needs Analysis Questionnaire. The questionnaire is titled 'Multimodal and Language Proficiency Questionnaire'. The Multimodal and Language Proficiency Questionnaire identifies the following components: (a) use of technology, (b) frequency of multimodal use in English, (c) frequency of English language use, (d) perceptions of proficiency of multimodal use in English, (e) perceptions of proficiency of English language use, and (f) perceptions of proficiency in everyday communication. In the following section of this chapter, the English Proficiency Test (EPT) is described. The EPT is adapted from an online test entitled 'Test for English Proficiency' designed by Educational Testing Service and the 'Assessment Test' designed for 'The Assessment of Pupils' Skills in English in Eight European Countries'. A speaking component is not assessed because of time constraints: only listening, reading and writing components of the test are described. The EPT is administered over three occasions to investigate if there is change in students' English language proficiency levels. Raw scores from the test are used for purposes of consequential validity.

The discussion continues with the description of the semi-structured interviews carried out with both students and course planners. In this study, the students are asked questions with regard to their familiarity with technology, technology use in language, expectations of the CE1 course as well as their general evaluation of the CE1 course and the overall language program. The course planners are also asked questions with regard to the history of the CE1 course, general aims and principles that guide the design of the course, satisfaction with learning outcomes, perceptions about skill usage outside the classroom, perceptions about the CE1 students, perceptions about the use of print-based modules in the teaching and learning process as well as perceptions about incorporating multimodal texts for teaching and learning.

The measured variables are presented in Table 7.1.

Table 7.1

Measured Variables

Variable Name	Description	No of Items	Scale	Min	Max	Reliability
AGE	Respondent's age	-		19	29	-
GENDER	Respondent's gender: Male Female	-		0	1	-
ETHNIC	Respondent's ethnicity: Malay Chinese Indian Indigenous	-		0	1	-
STATE	Respondent's State of Origin: Northern States Central States Southern States Eastern States East Coast States	-		0	1	-
FACULTY	Faculty the respondent is enrolled in: Faculty of Social Sciences and Humanities (fsscihum) Faculty of Cognitive Science and Human Development (fcscihdv) Faculty of Information and Communication Technology (fict) Faculty of Business and Commerce (fbusecon) Faculty of Arts and Music (fartmus)	-		0	1	-
MUET	Malaysian University English Test band levels: 6=Very good user 5=Good user 4=Competent user 3=Modest user 2=Limited user 1=Extremely limited user	-		1	4	-
NEEDS	Respondent's learning needs:		Rasch scale	-4	3	
	Group work and communication (grwkcm)	7				0.69
	Learning strategies (lrnst)	13				0.76
	Nature and strength of motivation (motstr)	7				0.73
	Teacher-centred approach (tccap)	11				0.70
	Culture learning in English as a Foreign Language setting (cullng)	4				0.52
	Difficulties encountered in the learning process (diflnp)	11				0.71
STCAP	Attitude towards teaching approach: Student-centred teaching approach	2	Rasch scale	1	5	0.53
USETEC	Types of Technology used:		Rasch scale	-2	4	
	Technology for personal use (persnl)	4				0.63
	Technology used in the university (uni)	3				0.65
MMLP	Multimodal and Language Proficiency:		Rasch scale	-4	3	
	Frequency of English multimodal texts use (frmm)	29				0.70

	Perceptions of English proficiency for multimodal texts use (ppmmu)	9				0.75
	Perceptions of English proficiency for university activities (ppfenus)	9				0.68
	Perceptions of English proficiency for everyday communication (ppfedcm)	9				0.74
FRENGUS	Frequency of English language use for university activities	9	Rasch scale	-2	3	0.58
EPT	English Proficiency Test :			11	88	-
	Listening	21				
	Reading	23				
	Writing	2				

This chapter also discusses the documents that are used to collect data such as the course outline, syllabus, student profiles, student assignments and the teaching and learning resources. These documents provide information about factors such as students' background, age, types of texts used in the classroom and grades in the SPM as well as the MUET examination. The members of this study also provide information about their satisfaction with current teaching methods, perceived needs and expectations of the CE1 course and their reasons for enrolling in the course. The chapter concludes with description of the validation of instruments used in the present research study with emphasis on fit indices of the different models tested.

Chapter Eight

Technology and Learning Needs

This study is grounded on two important ideas: First, for an educational program to unfold successfully, needs analysis is paramount (Benesch, 2001; Leki, 2000; Tajino et al., 2005), and the needs of the most important stakeholders must be taken into consideration. Secondly, technology and multimodal texts commonly represent students' lifeworlds, society and culture, thus enabling the students to make meaningful connections between literacy and their lives (Fuery & Masefield, 2000; Snyder, 2002). The inclusion of multimodal texts in the repertoire of texts in the Communicative English One (CE1) course can reduce the disjuncture between students' lifeworlds and their language learning experiences in the classroom.

This chapter investigates both of these ideas by first identifying the types of technology and multimodal texts that are prevalent in participants' lifeworlds, the purpose and frequency of use, perceptions in regard to the use of multimodal texts and their impact on the development of English language proficiency as well as perceptions in relation to their use in the future. Furthermore, participants' preference with regard to the types of texts used in the classroom need to be ascertained. Subsequently, their satisfaction with the learning and teaching processes in the CE1 classroom can be distinguished. In regard to this, the use of multimodal texts by the CE1 instructors must also be examined. Finally, the participants' perception, on the ways to improve the CE1 teaching and learning processes as well as their usefulness in their individual study program need to be identified.

The discussion in this chapter continues with two key players' views with regard to the inception of the CE1 course. The Director of the Centre for Modern Languages, who was responsible for the administration of the course as well as the Coordinator of CE1 were interviewed about the two important ideas that drive this study. Among others, their views at the time the course was designed, its aims as well as the principles that guided its design are identified. In addition, the key players' satisfaction with regard to the students' learning outcomes as well as their perceptions in relation to whether the course helps students in their enrolled programs, are examined. Moreover, the two key players' perceptions about the CE1

students in general are presented. Finally, their views on solely utilizing a print-based module in the teaching process as well as whether multimodal texts can be employed in the CE1 classroom are explored. The chapter begins with a brief overview of the participants' profile in order to obtain a deeper understanding of their lifeworlds.

8.1 Participant Profile

Thirteen students who were enrolled in the CE1 course as well as two key players in the program were interviewed. Additionally, written responses of about 90 participants were analysed in relation to the following questions: (a) are you content with the current teaching methods used by your teachers in the English Classroom? (b) what are your perceived needs and expectations of the course? and (c) what are the reasons you enrolled for the English language course offered by this faculty? It is argued that the views of the most important stakeholders need to be elicited with regard to the two major ideas involved in this study: learning needs and multimodal texts. The following section describes first, the 13 participants who were interviewed. Their names are changed to ensure anonymity.

Izan is a 21-year old male who is of Malay ethnicity. He comes from the East Coast State of Sarawak. He in enrolled in the Faculty of Social Sciences and Humanities and is from a non-English-speaking family background.

Zak is a 20-year old male who is of Malay ethnicity. He comes from the Eastern State of Kelantan. He is enrolled in the Faculty of Cognitive Science and Human Development and is from a non-English-speaking family background.

Affi is a 20-year old female who is of Malay ethnicity. She comes from the Eastern State of Kelantan. She is enrolled in the Faculty of Business and Economy and is from a non-English-speaking family background.

Silvi is a 20-year old female who is Indigenous. She comes from the East Coast State of Sarawak. She is enrolled in the Faculty of Arts and Music and is from a non-English-speaking family background.

Riz is a 21-year old male who is of Malay ethnicity. He comes from the Eastern State of

Kelantan. He is enrolled in the Faculty of Social Sciences and Humanities and is from a non-English-speaking family background.

Yus is a 24-year old male who is of Malay ethnicity. He comes from the Central State of Selangor. He is enrolled in the Faculty of Arts and Music and is from a non-English-speaking family background.

Azma is a 22-year old female who is of Malay ethnicity. She comes from the Southern State of Johor. She is enrolled in the Faculty of Social Sciences and Humanities and is from a non-English-speaking family background.

Rav is a 20-year old male who is of Indian ethnicity. He comes from the Eastern State of Pahang. He is enrolled in the Faculty of Business and Economy and is from an English-speaking family background.

Herm is a 24-year old male who is of Malay ethnicity. He comes from the Northern State of Kedah. He is enrolled in the Faculty of Social Sciences and Humanities and is from a non-English-speaking family background.

Has is a 22-year old female who is of Malay ethnicity. She comes from the East Coast State of Sabah. She is enrolled in the Faculty of Social Sciences and Humanities and is from a non-English-speaking family background.

Kami is a 20-year old female who is of Malay ethnicity. She comes from the Eastern State of Terengganu. She is enrolled in the Faculty of Cognitive Science and Human Development and is from a non-English-speaking family background.

Sue is a 19-year old female who is of Malay ethnicity. She comes from the Northern State of Perak. She is enrolled in the Faculty of Business and Economy and is from a non-English-speaking background.

Nura is a 22-year old male who is of Malay ethnicity. She comes from the Northern State of Perak. She is enrolled in the Faculty of Social Sciences and Humanities and is from

a non-English-speaking background.

Az is the Director of the Centre of Modern Languages. He had just been appointed to this position after leading the Faculty of Languages as the Dean for four years.

Nor is the Coordinator of the Communicative English One course. She too had just been assigned to this position. She had just completed her Masters degree at the *Universiti Pendidikan Sultan Idris* (UPSI).

8.2 Technology and Multimodal Texts

It is clear from the participants' responses that technology and multimodal texts play a large role in their lifeworlds. All of the 13 participants stated that they used the following technology and multimodal texts: television, radio, computer, laptop, internet, cell phone as well as the MP3 player. However, the television, radio, computer and internet were the most popular of the new technologies. This confirms previous research findings which affirmed that technology and multimodal texts were part of students' lives, society and culture (Wim Veen, 2002; Wim Veen, et al. 2003). Most of the participants stated that they used these technologies mainly for information and communication purposes. From their responses it can be interpreted that the type of information they derived with the use of technology can be classified into two types: (a) world issues or general knowledge, and (b) information in relation to learning. Affi, said that she used her laptop "to know the progress of issues happening overseas" while Has said that she used the computer because it was "easy for me to do my work…housework (homework?)…for example aah…my lecturer give [me] assignment, I can use my computer aah…very easy and fast". Sue seemed to reiterate this when she said "…because it is easy for me when I am doing my daily chores [homework?]. I don't deny it, it also help[s] to improve my English".

Two of the participants, however, stated that they also used technology for recreation as well as entertainment. Silvi said "when I feel bored I go to [the] internet and chat", while Riz claimed that he used technology "[for] entertainment". Communicating with others through technology appeared to play an important role in some of the participants' lifeworlds. Chatting emerged as an important form of communication for two of the participants. Both Silvi and Kami maintained that they chatted with their friends. The other participants also

implied that they employed technology to communicate with friends or other students. However, they did not indicate whether they did this through chatting, emails, cell phone or other methods.

Interestingly, learning and technology emerged as important themes in the interviews. Six out of the 13 participants indicated that they used technology to help them with their studies. Azma for example declared,

> If I use radio, I can learn to speak very well. I will also aah…like television…I can aah…learn like the way of speech in English.

Izan, Rav, Herm, Has and Sue implied that technology helped them in their learning. It can be concluded that the participants of this study commonly used technology for three main activities: information, communication and learning.

Eight participants claimed that they used the English language to operate these technologies every day. Five mentioned that they only used it sometimes. Zak, Affi, Silvi and Riz indicated that the language challenge was a hindrance to their use of technology. In reply to the question "How often do you use English language to operate these technologies?" Zak said "only sometimes…(giggle)…this technology is in English. We are forced to use". Riz appeared to support this when he retorted "often…usually communicate in *Bahasa Melayu* (Malay)" and when asked the reason for doing this, he replied, "because I am not expert in English".

The participants suggested that when they used the internet, they employed English as the content was expressed in that language. Izan for example exclaimed, "most of it to surf internet. Hmm…if TV and radio just *Bahasa* (Malay) is used. But for surfing [the] net English is used". Azma who retorted "and also for computer [internet?] every day because I have more assignment" and Has, "aah…computer is aah…internet same as language [sic] English. Frequent in communication" supported Izan's view that the English language was used more frequently when surfing the net. Azma also reiterated that she used English when she listened to the radio or watched television, unlike Izan who claimed that he employed Malay for the same activities.

8.3 Multimodal Texts and English Language Proficiency

All but one participant were affirmative when asked the question "Do you think multimodal texts help you develop your English language proficiency?" Zak did not reply and possibly he had difficulty understanding the question. Azma commented that besides contributing to the development of English language proficiency, multimodal texts helped to enhance her computer skills as well. Herm added that because most of the texts on the net were in English, when he referred to them while working on his assignments, he indirectly knew that it would improve his language proficiency. Has suggested that people like her who were too shy to use the language because of their lack of proficiency, benefited from multimodal texts. From the various responses that participants made to support the use of multimodal texts, it can be deduced that all the 13 participants of this study perceived that in one way or another, the use of multimodal texts contributed to the development of English language proficiency. Some of the responses are exemplified below.

Herm : umm…when we surf the net, we use word in English to find the point. So we refer to English and information also given in English.

Zak : if with film, the film has its story. So when we see the story, err…sometimes we can…refer it to aah..subtitle.

Riz : okay…[for] example handset (cell phone), if friends give [sic] message, if we don't understand we can add our vocabulary by finding what he is talking about [sic].

Azma : hmm…we use radio, we can learn English with ways of speech…and also to answer questions also. Like aah…television we can hear what is spoken and also we can aah…yes, imitate.

Has : aah…(giggle)…for me in grammar, to improve grammar, my pronunciation and then in my communication.

Izan and Affi maintained that they would use multimodal texts in their chosen vocation. Izzan for example explained,

> example now aah…lots of lessons or multimodal text aah…is used in teaching. Example, we take information aah…from one data to another data from other university. Example, it will give us reference, we will need to use English.

It can be concluded that Izan considered that he would employ multimodal texts in the future to facilitate his teaching. He would use multimodal texts to collect resources from other

universities. Affi was more concise when she stated, "err…this maybe in work and we in UPSI as we want to become teachers, we can teach students". Rav also affirmed this idea.

Silvi, Azma and Nura declared that in future they might use multimodal texts to communicate with others besides relying on it to "know what is happening in the world" as well as "to improve my English". Riz suggested that when he listened to songs, he might explore the lyrics and Yus implied that he might visit cyber cafes to check information. Has retorted, "aah…for example, when reading magazines, we watch (see?). Other than CE we can watch film, for example can help me to study English language, magazines, articles and then newspapers". Zak, whose language proficiency was the weakest among the participants, struggled to communicate that in future he might use multimodal texts "hmm…[when] we have discussion maybe err…with our friend[s] in English. Err…maybe it can improve…cooperate [sic] with our friend[s]".

From the exchanges, it is evident that most of the participants perceived that multimodal texts impacted on the development of their English language proficiency. It is also obvious that the participants of this study considered that they would be employing multimodal texts in future for various activities.

8.4 Multimodal or Print Texts?

Ten of the participants revealed that they preferred multimodal texts to print texts. Izan disclosed that "at the moment we use lots of print texts. Err…but we also need lots of multimodal texts apart from the books we use". He added that multimodal texts encompassed all the information needed and they were easy to understand (Warschauer and Meskill, 2000). Zak added that he preferred multimodal texts because they were more oriented towards technology. The participants implied that it was easier to obtain information from multimodal texts compared to print (Shawcross, 2004). Affi, for example claimed, "…it is easy to get information and print text we have to find ourselves". Silvi supported this view when she stated, "hmm…maybe my type is very hard in reading, right [sic]. I prefer to listen and to see. It doesn't take more pressure from me [sic]". What Silvi is trying to communicate is that she found reading difficult and preferred to listen as well as visualise. Multimodal texts reduced the pressure on her.

Riz supported his course mates' views when he said, "we use pictures. Students will be interested too. Print text is only reading and boring". Riz probably saw the synchronous communication mode of multimodal texts attractive (Suhor, 1991). Kami was in total agreement with Riz. She said that multimodal texts had "aspects [that were] easy to understand. Like we see there is all kind of usage. So it is easy. From picture we see animation. We understand more". Sue too found the 'picture and sound' characteristics of multimodal texts fascinating.

Herm found print texts boring. Has added that multimodal texts enabled her to "learn and understand the correct pronunciation. In magazine [sic] (print text?), I don't know how to pronounce and then I can't use that word, the actual sound". Has tried to emphasize the advantages of multimodal texts which incorporated sound. She raised the point that a learner benefited from hearing how a word was pronounced. An interesting observation made by Nura was that multimodal texts provided instructions unlike print texts. She retorted, "sometimes if aah…multimodal [texts] we can apply. If print text, if this is all but no instruction aah…very hard to understand [sic]". It is possible that Nura is emphasizing that communicating the message through multiple mediums such as visuals, sounds and graphics, provided the reader with the option of 'seeing and imitating' (Suhor, 1991). In addition, the reader was able to rely on another medium to facilitate understanding if one medium was unsuccessful.

Yus and Rav, however, expressed the view that they preferred learning from print texts. Yus said that this was because he could read every day while Rav explained that with print texts, "we can (pause) learn the word, we can read that, improve our speaking in English". When asked if he was not able to do that with multimodal texts, he replied, "print texts, yes, aah…clear copy. We can see, we can keep it [sic]". It was obvious that both Yus and Rav preferred texts that were tangible. Easy access and tactile quality of texts were important factors that influenced some students' choices. Participants' responses in regard to text preference demonstrated that individual learning styles affected choices as well.

When participants were asked if their instructors used multimodal texts in the CE1 classroom, seven responded negatively while the rest were positive. Izan, Zak, Affi, Silvi, Riz, Yus and Azma exclaimed that the CE1 instructors did not use multimodal texts in the

classroom. Some of them considered that although multimodal texts were not used in the teaching and learning process, it was possible that they might be employed in the future. Affi thought that this might happen "if there is request from students". Silvi disclosed that even though her instructor did not employ multimodal texts to teach, she still found the lessons interesting as the teacher did not pressure her. Yus seemed to agree with this idea.

Zak, on the other hand, expressed the view that he would like his instructor to use multimodal texts to teach as "teenagers nowadays aah…use technology a lot. They are not into printing [print?] material. Multimodal text [is] more interesting". Azma lamented that multimodal texts should be incorporated in the classroom "because it will be easy like upgrade [sic] our English language". What Azma is trying to say was that it is easier to improve language proficiency with the aid of multimodal texts.

Rav, Herm, Has, Kami and Nura claimed that their instructors used multimodal texts in the teaching and learning process. They stated that their instructors used LCDs, laptop, CD, movies, internet, radio, power point slides as well as pictures in the CE1 classroom. Sue stated that her CE1 instructor had just begun by asking the students to bring their laptops to class.

The idea that emerges from this discussion is that some of the instructors were using multimodal texts in the CE1 classroom while others were not. Some of the respondents found that instructors should employ multimodal texts as they were already a part of students' lifeworlds. However, it is clear that teaching styles also contributed to whether students found the class interesting. Although, some instructors did not use multimodal texts, students still found the lessons interesting. It is possible too that instructors' preference of text-type ultimately influence the choice of text employed in the teaching and learning process.

8.5 Communicative English One and Learning Needs

All but one participant stated that they were happy with the teaching and learning process in the CE1 classroom. Yus emphasized that he was happy because what he had learnt in primary school was repeated in the CE1 course. This, he added, gave him more information. Zak declared that he was happy because his instructor was "sporting and not very serious". Affi shared similar views with Zak. Silvi announced that whether a person was happy or not

would depend on the instructor teaching the course. According to Silvi if an instructor knew how to make the class funny as well as enhance their thinking, then the students would like the subject.

Riz, Yus, Azma, Rav, Has and Kami said that they were happy with their CE1 instructors. Riz said, "Yes, I do because lecturers [sic] understand that some students are not expert [proficient?] and fulfils students' taste [caters to student needs?]". Azma agreed with Riz when she said "…he will give full attention to us and also try to simplfy this English language". It is evident that instructors who understood students' strengths and weaknesses and catered for them accordingly contributed towards learner satisfaction. This was reiterated by Has who spoke of her CE1 instructor, "hmm…yes, very happy with Mr. Ayob because my lecturer aah…is clever to tackle everyone's heart to aah…be more interested to learn English". The researcher met Mr. Ayob personally during the data collection process and found that he was indeed a very affable man who put his students' needs before everything else.

Another observation that was emphasized by the participants was that 'sense of belonging' also contributed to course satisfaction. Yus reflected, "Yes I [am] happy in class. I have a group. I can discuss in my group. From there I can develop my English". It was possible that Yus felt comfortable in his group and as a result he found the teaching and learning environment a supportive and happy one. Kami implied that class size was another contributing factor towards student contentment. She affirmed, "Yes, I am happy because small class…So all people [sic] can take [have?] the opportunity in class [to participate?]. However, Nura stated that she was not happy with the teaching and learning process in the CE1 classroom, but she did not want to explain her discontentment in detail.

It is interesting to note that although a majority of the students asserted that they were happy with the teaching and learning process in the CE1 classroom, when asked if there were any aspects that should be considered in order to improve the teaching and learning process, everyone affirmed that either one or two things could be undertaken for improvement. The following responses confirmed that there was still room for improvement in the CE1 teaching and learning processes:

> Yus : Err…okay. Most of it this generation, err…if we see grown-up students, they are more practical in teaching direct to the point. But the grown-up graduates need games to help us learn easily [sic].

Yus was referring to the teaching methods employed in the CE1 classroom. He considered that the instructors tended to employ teaching techniques that were too practical because of the students' ages. Yus was of the opinion that incorporating activities such as games would facilitate learning and age should not be the determining factor in relation to the type of activities carried out. Additionally, there was a strong call for the incorporation of multimodal texts in the teaching and learning process.

> Zak : Err…in my opinion maybe we can add in songs, err… poem (pause) something like that which can pull [sic] our attention to learn English. Err…something interesting.
>
> Affi : Umm…before the lecturer teaches, he can show film[s] or songs which can help students to understand English. Err…also to pull [sic] students attention to study English.
>
> Riz : can use multimodal texts [for] discuss [sic]. Maybe with this all students will understand better and have interest to learn English.
>
> Azma : Aah…I will change this subject from book umm…to internet because it is more knowledgeable than the book [sic].
>
> Herm : Aah..there is, [for] example usage of multimodal texts need to be increased more.

From the various responses, it is obvious that the participants did not find the current teaching and learning methods in the CE1 classroom, fulfilling. The participants suggested that other methods of teaching should be introduced into the classroom in order to attract students' attention as well as to evoke their interest in learning English. Some of the students found the learning of English to be tedious and boring. Has, for example, said,

> in my opinion to improve English language aah…I am sorry to say…because English because I don't understand aah…too boring. To me multimodal text is important because to find by us in different form [sic].

What Has was struggling to say was that she found English boring as she did not understand it. Multimodal texts would afford the opportunity for students to learn through different forms. Additionally, she added "I will aah…improve with exercise, grammar (giggle) because to me too important. Then may be vocabulary and when we know ourselves, I think grammar (giggle) is more important".

There are other students though, who place a lot of emphasis on speaking skills. Yus asserted that in order to improve the teaching and learning process "in the English language subject, we [must] communicate always [more?] to improve our English" Most important [is] communicate [sic]". Rav supported Yus when he suggested that there should be more reading and speaking in class. He claimed that the current amounts of reading and speaking activities were not sufficient. Nura seemed to be in agreement that there was not enough communication in the CE1 classroom and even though students were not fluent in English, the practice would be beneficial.

The participants' suggestions emphasized that the CE1 students knew what they wanted and needed in the classroom. Although they said that they were happy with the course, they argued that the course could be improved through the incorporation of a variety of teaching methods, using multimodal texts as well as activities. The most imperative issue was that the CE1 students were not proficient in English and hence they found the subject difficult to understand as well as boring. Thus instructors need to employ a variety of teaching approaches and techniques in the classroom in order to evoke as well as sustain the learners' interest.

When the participants were asked if they thought CE1 helped in their individual study programs, 12 of them said 'yes' and one said that she was just doing the course to pass and that it did not help her at all. Most of the participants realised the importance of English and saw its relationship to other subjects. Some of the participants declared that because the study program they were involved in was in English, CE1 facilitated learning. Rav for example announced, "hmm…yeah, because my studies are all in English. So if I learn CE1, it will give me more err…to understand more [sic]". What Rav was trying to say was that CE1 would help to enhance understanding in his current study program. Affi reiterated this when she said, "in CE1, umm…once a week we still learn English. In other subjects related to English we still learn in English". Yus said that the CE1 definitely helped in his study program, "aah…(pause) I can speak in English with everyone in my faculty. Herm, Kami and Sue seemed to reinforce this view.

Except for Silvi, the other participants saw CE1 as the basis for other things such as sourcing information and job opportunities. Izan for example asserted, "…even though we are

from Malaysian Studies, CE1 helps in grammar, English language itself because the informations [sic] are important". Izan was referring to the fact that although his enrolled study program was Malaysian Studies, CE1 was important because much of the information was only available in English. On the other hand, Silvi maintained, "so for me, I'm ex-student of UITM take course of English and then (pause) for me it depends on me, not because of the course". Silvi had done a diploma program at *Universiti Teknologi Mara* (UITM) where she was required to enrol for an English language course. Hence she perceived that whether she did well in her enrolled study program depended entirely on her and not the CE1 course. Silvi added that if she wanted to learn, she relied on herself as well as multimodal texts, which she found more useful than CE1.

What is evident from the interviews is that most of the participants saw the importance of learning English and were endeavouring to learn it. For instance, Has highlighted, "to me English for myself is very important. I will feel shy if don't get to communicate with others" while Zak stated, "umm…teenager[s] nowadays…err…when we speak in English umm…they laugh. Aah…so don't laugh, think positive". What Zak was raising was that when he tried to speak in English, his friends laughed at him. He implied that instead they should be positive about his attempts.

The interviews emphasize that technology and multimodal texts are present in students' everyday lives. The students are of the opinion that multimodal texts need to be used in the CE1 classroom and that some of their teachers are already employing them to teach. An interesting idea that emerges from the interviews is that the students are of the opinion that teaching styles contribute to whether the lessons are interesting. Consequently, the students stressed that the current teaching methods used by some of their teachers were not interesting. Students also emphasized that teachers should be more aware of their needs and plan their lessons accordingly. Although, the students emphasized that they were happy with the CE1 course, they added that the CE1 could be improved with the incorporation of a variety of teaching methods as well as using multimodal texts. The following section of the discussion analyses students' written responses with regard to three specific questions, namely, (a) are they satisfied with the current teaching methods in the CE1 classroom? (b) what are their needs and expectations of the CE1 course? and (c) what are their reasons for enrolling in the CE1?

8.6 Contentment with Current Teaching Methods in the CE1 Classroom

8.6.1 Satisfied with the Teaching Methods

Out of the 316 participants who were asked if they were content with the current teaching methods used by their instructors, only about 88 responded. This could be due to fatigue. The Needs Analysis Questionnaire was relatively long and participants were required to write their responses to three open-ended questions (58, 59 and 60) at the last section of the questionnaire. Question 58 was "Are you content with the current teaching methods used by your teachers in the English classroom (CE1)? Please explain". Although, less than half of the participants had written their response to the question, from those who had, two important themes emerged: teaching methods and student emotions. Teaching methods could be further classified into two categories; one where students found the method to be positive and the other, negative.

Participants who responded positively with regard to teaching methods emphasized that the techniques used in the CE1 classroom were simple and easy to understand. A majority of the students listed this as the contributing factor as to why they found the teaching methods satisfactory. Some of the responses that confirmed this were expressed in the following ways.

"Current teaching method[s] easy to understand, suitable for students".

"Teacher uses simple methods to make students understand such as technology" [*sic*].

"I understand teacher's teaching, he uses a simple way to make us understand…".

Six of the participants also stated that the teacher employed simple language to teach as well as to explain the lesson in detail. Responses such as "I understand his teaching, he uses simple words to explain" and "I like my teacher's way of teaching, easy to understand as she uses simple language to teach" were highlighted. Explaining the topic or lesson in detail appeared to be another factor that contributed to participants' satisfaction. Two of the six participants who listed teacher explanation as the factor that contributed to satisfaction, wrote "Teacher questions us if we don't understand some topics, she will explain until we understand", as well as, "the lecturer explains the topic in detail and students understand". In addition, these participants implied that when they did not understand, their teacher repeated the explanation until they ultimately understood.

The participants of the study also wrote that they found the teaching methods satisfactory because the teacher spoke slowly and discussed current issues in the classroom. Employing simple methods, simple language and speaking slowly were the three factors chosen by a majority of the students. This could possibly be due to the fact that most of the students enrolled in the CE1 course were from non-English-speaking backgrounds and were located in either Bands 1, 2 or 3 in MUET. Their English language proficiency was low and understanding the content of the lesson was the most important aspect of the teaching and learning process. Teachers who provided opportunities for students to participate in the lesson were also viewed favourably. As a majority of the study participants were weak in English, opportunities to participate in the lesson and practise using the language were appreciated as important. For example, two participants wrote: "She gives students opportunities to take part in the studying process, she also explains if we don't understand" and "The teacher gives opportunity to all students to take part in the studying process in the classroom". Seven students listed this factor as contributing to their satisfaction of the teaching methods.

The use of a variety of methods in the classroom is another factor that participants emphasized as contributing to satisfaction. Some participants stressed, "He teaches with variety and makes us enjoy lessons"; "Uses English music in class so that we can learn how to speak"; "My teacher uses multimodal texts so I am able to understand, it makes the class interesting". The participants also responded that when teachers used a variety of methods such as technology, they found the lessons to be interesting and useful. Additionally, some participants stated that the teachers understood them and taught accordingly. It is possible that the students meant that the teachers knew their proficiency levels and taught accordingly. It is also possible that the participants meant that their learning needs as well as the expectations of the course were being met. Finally, the participants wrote that they were content with the teaching methods because they derived much information as well as general knowledge from the lessons.

Many of the participants also stated that they found the teaching methods to be satisfactory as their teachers gave of their best. These participants were clearly content with the teaching and learning process in the CE1 classroom. This could be observed from their

responses: "my teacher always tries to give us the best" and "I believe teachers will always do their best to help us". It is obvious that these participants admired their teachers.

In order to summarize the discussion above, it can be concluded that participants who were satisfied with the current teaching methods employed in the Communicative English One (CE1) course did so because of factors such as: (a) simple teaching methods, (b) simple language employed by the teacher, (c) the speed of communication, (d) detailed explanation, (e) opportunity for classroom participation, (f) the use of a variety of teaching methods and (g) teaching according to the students' level of performance. There were some participants who found the opposite to be true. They listed that among the factors that played a role in contributing towards their dissatisfaction were: (a) teachers who did not understand their students; (b) failure to use interesting teaching methods; (c) use of Malay to teach English; (d) teaching methods were not helpful; and (e) the need to employ more interesting materials. These factors are discussed in the following section.

8.6.2 Dissatisfied with the Current Teaching Methods in CE1

Some participants said that they were not satisfied with the teaching methods as their teachers failed to understand their problems. One wrote, "Teachers need to know students' problems better". This view can have resulted from a mismatch between teaching methods and the student's level of performance. These participants considered that their teachers did not empathise with them. Additionally, a few of the participants contended that they were not satisfied with the teaching methods as they were uninteresting. This can be seen from the following responses:

> "There is a lack, they have to use some additional material".
>
> "My teacher doesn't find interesting methods to attract students' attention".
>
> "Teachers should know the students in the class, new methods must be used to attract interest".
>
> "My teacher's teaching methods are not effective".

The participants who raised these issues are clearly dissatisfied with the current teaching methods employed by the teachers of the CE1 course. These participants suggested that their teachers were not employing a variety of methods. One participant lamented, "We don't use material like audio or video; we rarely speak English, hard to learn new words". Another observation made by the participants was that some teachers used Malay to teach English in

the CE1 classroom. The teachers were obviously employing the translation method to teach. The participants evidently did not find this helpful or contributing towards their mastery of English. It is interesting to note, however, that although there were participants who were dissatisfied with this method of teaching, there were others who thought that their teachers should employ the translation method to teach English. This can be seen from the following response, "…teachers must give students many examples and translate in Malay". Clearly, there were students who expected their teachers to teach in the target language and others who wanted them to employ the *Bahasa Melayu* language in order to teach the English language.

Another factor mentioned by the participants who did not find the teaching satisfactory, was that the methods employed were not helpful. One participant wrote, "it is not helping me improve, need more grammar, teacher's method not helping". This participant appears to be distressed. Another participant stated, "Sometimes yes, sometimes no! I want the teacher to teach because my English is poor". Yet, another participant announced, "My teacher's teaching methods are not effective". All these responses indicate that some of the participants who took part in this study did not find the current teaching methods useful. One participant added that, "It could be improved".

Additionally, participants' also wrote that their teachers did not understand them. One participant stated, "Teachers need to know students' problems better". This view was reiterated by another participant who stated, "Teachers should know students in the class, new methods must be used to attract interest". The theme of 'not understanding the student' could be interpreted from the perspective of learner needs and instructions. It was clear that the students perceived that their learning needs and expectations of the course were not matching the instruction that they received in the CE1 classroom. Thus the participants were repeatedly talking about either 'teachers understanding them' or 'not understanding them'.

There were a few participants who mentioned that there were instances where they understood their teacher and others where they did not. One participant suggested, "Teachers should use simple sentences when explaining things, important for students to understand". Other participants wrote, "sometimes don't understand"; "very weak in English" and "can't speak English". It is evident, that some of the participants were finding the lessons difficult to follow because of their low English language proficiency. These participants appear to be

distressed by their lack of understanding of the lessons. This resulted in their dissatisfaction with the teaching methods used. An interesting observation that was made by one participant was that the students found the teaching method boring because of a teacher's personality. This participant wrote, "I find it boring, the teacher is too soft, the class would be fun if the teacher is a little strict". It is possible that the teacher's gentle personality was a contributing factor as well as affecting particular learning outcomes or classroom behaviours. This student is obviously finding it disturbing and this affected the student's level of satisfaction.

It is possible that these very contrasting views of the teaching methods employed in the CE1 classroom are a consequence of the number of instructors teaching the course. The total number of students enrolled for the course in Semester One, was about 1,350 students. There were more than 45 CE1 classes that were taught by more than 30 instructors, who were employed part-time by the university. The participants who took part in this study came from 13 different classes. It is possible that some of the instructors who taught them were employing teaching methods that were current, interesting as well as easy to understand. These instructors were also aware of their students' needs and planned their lessons accordingly. Hence, the participants found the lessons satisfactory. There are possibly other teachers who were not as committed to the teaching process as they were part-time instructors and were not fully accountable to the university.

Analysis of Written Statements

It is possible too that the instructors are not guided by a common teaching method and are employing different teaching approaches and techniques which some students find interesting as well as contributing to their learning while others, do not. Besides views about teaching methods, another feature that emerges from the analysis of participants' written statements is found from the adjectives that they used to describe their satisfaction. Students' feelings impact on their performance as well as their views and perceptions of the course. Hence, it is important to consider the participants' emotions. Gauging emotions through the adjectives the participants use to describe the teaching methods can indirectly communicate how positively or negatively they felt about the teaching and learning process. The next section of this discussion focuses on this aspect.

Most of the participants who are content with the teaching methods employed in the CE1 classroom emphasize the fact that they feel one of the following emotions: satisfied, pleased, happy, nice, good as well as not sleepy. The participants also emphasize that they enjoy the class. One participant wrote, "I am satisfied with current teaching method although we just use a book but it has many exercises [sic]" to emphasize that they were satisfied. Feelings of satisfaction are experienced through their positive views of the teaching methods. Similarly, another participant stated, "Pleased with current teaching methods, the lecturer always helps us to use English in class". Both of these participants were encountering different teaching methods in the CE1 classroom. However, it is possible that they were experiencing positive emotions because their learning needs were being met. Likewise, one participant wrote, "I am happy with the method of teaching with textbook and slide presentation". This participant reiterated that the materials employed in the classroom were meeting specific needs.

However, one participant did not specify which aspects of the teaching methods were contributing to feeling positive. This participant simply stated, "It is just nice" thus implying that reactions to the teaching methods were positive. Likewise this sentiment is shared by another respondent who said, "It is good". Both these responses indicate that the participants were content with the dynamics of the CE1 classroom. 'Not being sleepy' in the classroom was also raised as an important factor by some of the participants. 'Feeling sleepy' can be equated with a feeling of boredom. For some participants 'not being sleepy' is a positive attribute that can be related to the way the teacher taught in class. In one instance a respondent said, "I am not sleepy when she teaches and I am happy".

This discussion thus focuses on satisfaction with teaching methods in the CE1 classroom. The next section of the discussion considers the participants' perceived needs and expectations of the course.

8.7 Perceived Needs and Expectations of the Communicative English One

Only 77 participants wrote responses to "Please outline your perceived needs and expectations of the course". This section examines what the participants of the study considered that they needed and expected from the course. A majority of the participants listed the four skills of listening, speaking, reading and writing as areas where they needed

more training. Grammar, error analysis and classroom language (academic language) were the other skills that they had listed as requiring more instruction and practice.

8.7.1 Speaking Skills

In total 46 participants listed 'speaking skills' as their first choice of the skill that they needed more training in. From the responses recorded it was found that most of the participants perceived speaking as a highly important skill. It might be assumed that since most of the participants were from non-English speaking backgrounds, they needed more practice in the skill of speaking so that they would improve. This was evident in the responses obtained where the participants were satisfied with the teaching method because their instructors presented them with the opportunity to speak. The following statements record some of the participants' responses.

> "Hope teachers give us more chance to speak in English and to improve and communicate with others".
>
> "I hope my English is better, I can speak English, am fluent in communication".
>
> "I want to improve my speaking as English is important for communication".
>
> "I really need to practise my speaking, it is important to improve my pronunciation and speech".

These responses reflect the participants' overall views of needs and expectations of the CE1 course. Ability to speak in English was distinguished as the most important skill by a majority of the participants. The participants also considered that in order to have mastered the English language, they would have to demonstrate that they could speak in the language fluently. This sentiment was reiterated by the following responses: "Speaking is the most important skill, We can improve our confidence if we speak well" and "Speaking skill is very important and I need this skill to improve my self-confidence".

The participants believe that the ability to speak English fluently empowers their other actions. They state that the ability to speak fluently enables them to communicate with others, improve confidence, and do everything else as well as secure good jobs in the future.

8.7.2 Listening Skills

Seventeen participants recorded listening as the skill that they needed further training in, alongside the other skills. Some participants wrote, "I need listening skill more as people speak in English without stopping, not easy to understand, teacher teaches very fast" as well as "…listening is important because English pronunciation is difficult". What is emphasized here is that participants' lack of proficiency in the language resulted in their inability to comprehend a proficient speaker, especially one who spoke rapidly. Hence, the participants considered that they needed training in efficient listening skills. However, unlike speaking, the participants recorded listening as their second, third or fourth option after speaking.

8.7.3 Writing Skills

Twenty-six participants listed writing as one of the skills in which they needed or expected more training. The following responses illustrate the reasons as to why the participants believed that they needed more training in writing.

> "I need more practice in writing".
>
> "This course needs to incorporate more writing…as students are weak in these areas".
>
> "I want to improve my writing…as it will help me study more efficiently".
>
> "I am really weak in writing and I hope with the lecturer's guidance I can work on my writing skills…".

As with listening skills, the participants had listed writing as one of the skills in which they needed to improve along with other skills. However, the participants of this study did not place as much emphasis on listening or writing skills as they had done on speaking skills. Consequently, it is possible to argue that the participants of this study identified speaking as more important than the other skills, since more students listed speaking as a skill in which they needed more training, even though everyone else saw it as the primary skill in formal study.

8.7.4 Reading Skills

Only ten participants listed reading as one of the skills in which they needed more training. Moreover, this was the least chosen skill among the four language skills of listening, speaking, reading and writing. The participants wrote, "…want to improve reading…", "I hope this course can help me improve…and read in English", "I want to improve my English, especially…reading and comprehension", "…I want to improve on reading…" and "English

is the main language, reading is important no matter which level of education…". As with listening and writing, reading was perceived by most of the participants, as a secondary skill.

8.7.5 Other Skills

The participants of this study also listed grammar, error analysis as well as classroom or academic language as skills in which they needed more training. The participants considered that with the improvement of grammar, they would be able to use other language skills more meaningfully and efficiently. Moreover, error analysis was also chosen by some participants because "Error Analysis is important to improve". Nine participants listed grammar as one of the skills in which they needed more training, and 12 participants chose error analysis. Another five participants listed classroom or academic language as a skill in which they needed or expected more training. Thus limited concern for classroom or academic language suggests that informal or non-formal modes of instruction are likely to be preferred to more formal approaches.

8.7.6 Other Needs

Besides language skills, the participants also listed their needs for other aspects of language learning. The participants among other needs had listed the following needs: (a) techniques that were simpler as well as interesting; (b) the use of multimodality in the classroom; (c) teachers who were experts as well as having good personalities; (d) to improve in their study programs; (e) the course to be conducted for a longer period of time; and (f) additional activities in the use of language.

The members of the CE1 course can be characterised by a very heterogeneous group of students who are made up of different ages, genders, ethnic backgrounds, state of origin, faculty, family circumstances as well as MUET level. All these student characteristics influence the different reasons as to why students enrol in the course. Although, the Communicative English One program is a compulsory university course, students may have enrolled in the course for a variety of individual reasons. The next section of this chapter considers these reasons.

8.8 Reasons for Enrolling in the Communicative English One Course

Analysis of the 80 participants' responses highlighted that there were seven main reasons as to why students enrolled for the course. The reasons were: (a) to improve in English language; (b) English was an important language; (c) it was a compulsory course; (d) to obtain a good job; (e) to learn to communicate; (f) to get good grades; and (g) to enhance confidence. These reasons are discussed further in the following sub-sections.

8.8.1 To Improve in English

The analysis of responses showed that 34 of the study's participants listed 'to improve in English' as one of their reasons for enrolling in the course. Although the core reason was to improve in the language, the participants stated that there were particular facets of the language in which they wanted to improve, such as learning the English language as well as communication skills and because it was an international language. Several participants wrote, "I want to improve in every aspect", indicating that they enrolled for the course purely to be proficient in the English language. Others, however, listed, "to improve my English to communicate easily with anyone" as well as "I would like to improve my English skills as English has become the most important language at international level". Still other participants wrote "I want to improve my language. Then I can use perfect English. I will not be ashamed to use it, it is an international language so we have to use it always". From these responses, it can be argued that the participants have a high regard for the English language and hold it in high esteem. They are aware of their problems in learning the English language and they were endeavouring to master it.

8.8.2 The Importance of English

Twenty-four participants of this study declared that they had enrolled for the CE1 course because they considered English as an important language. The participants expressed their opinions that English was important for the self, today, the future, as an international language, and for their chosen profession.

Several participants claimed that they were enrolled in the course because they saw the importance of English for their future careers. The responses that confirmed this are, "It is important for ourselves today" and "English is important in everything we do". There was also a respondent who claimed, "…it is important in my life…". These students were aware

that English existed in their lifeworlds and were attempting to master the use of the language. There were other participants who saw the need to master the language for the future. One participant wrote, "It is important for our future, hard to learn from the basic as my English is very poor [sic]". Another participant reiterated this by announcing, "It is important for our future". Another indicated, "I plan to go abroad to further my studies". Many Malaysian students were aware of the importance of English as the private sector in Malaysia had drawn attention to the fact that many graduates were unemployed because of their low level of English language proficiency (Gill, 2005). Furthermore, the government's many initiatives to raise English language standards in Malaysia had resulted in public awareness of the importance of the language. Thus the participants of this study knew that they had to master the English language for future gains.

Many for the participants also emphasized that they had enrolled in the course because English was an international language. These participants acknowledged that as an international language English was very widely used. They also observed that many of the reference books as well as world knowledge were written in English. Hence, they stated, "English is important to me. It is an international language, many reference books are in English" aptly communicating a strong belief in the importance of English.

8.8.3 A Compulsory Course

Many of the participants stated that they had enrolled for the CE1 because it was a university requirement and a compulsory course. Twenty-one participants listed this as their first reason besides other reasons.

"This is a compulsory course and has to be taken by all students".

"It is a compulsory course"

These sentiments were reflected in other responses. Most of the participants implied that they did not have an option because the course was compulsory. This was obvious when they announced, "I had to enrol for this course because I only had a Band 2 for MUET". However, they stated that even though it was a compulsory course, enrolling for the course would help them improve their command of the English language. They saw the CE1 as a catalyst towards helping them in their overall proficiency in English. These participants' responses reiterated those of many other participants who had highlighted an awareness that English was an important language for them to learn.

8.8.4 Employment Opportunities

Fourteen participants claimed that they enrolled for the CE1 course because they realised that being proficient in English would guarantee them a job in the future. This perception affirmed the belief that in order to secure a job, a person had to be proficient in English. This could be the result of the government's initiative to stress the importance of learning English through the various programs that had been implemented in schools. Moreover, inability to speak English was usually considered as one of the problems associated with unemployment in the private sector (Gill, 2004b). Some of the responses as to why they enrolled for the CE1 are: "I want to improve my English as it is important to find a job"; "It is a compulsory course and I want to get a good job"; "I want to improve my English especially speaking and writing to get a job easily"; "It is important for graduates to get jobs". The participants who nominated this reason as to why they had enrolled in the CE1 course were expecting the course to teach them the English language skills that would enable them to secure a good job in the future.

8.8.5 To Learn to Communicate Proficiently

Some of the participants of the study also wrote that they enrolled for the Communicative English One course as it would help them to communicate with others more meaningfully and efficiently. One participant stated, "to improve my English to communicate easily with anyone…". This participant like a few others saw the CE1 as a tool that would help them to master English, proficiently enough to communicate with others. Similarly, other participants responded, "…it will help communication"; "…to use proper way to communicate"; "…want to improve the language so that I can communicate with foreigners"; "…communication can be encouraged through this course". All these responses confirm that the participants of this study saw the Communicative English One course as the catalyst in helping them to master the language and ultimately giving them a level of proficiency that would enable them to communicate with others, particularly those people from foreign countries.

8.8.6 Confidence

About five participants of this study stated that they had enrolled for the Communicative English One course in order to gain confidence. It is possible that these participants were not proficient in English and thus their confidence level was low, especially, when they needed to communicate with others. Their view of the CE1 course was that it would provide the ability

to communicate proficiently and that they would be more confident. Confidence level was also associated with their chosen profession. As all of these participants would eventually become teachers, they wanted to be able to communicate with their students in English. This could be identified through the participant who articulated, "…my English is poor and I want to learn more to be confident when I become a teacher". Another participant stated, "To improve English [sic], to be more confident in speech…". In addition, another respondent reiterated this view "…I want to be good in spoken English and speak confidently…"

The participants associate the ability to speak English proficiently with an enhancement of their level of confidence. It is possible that low self-esteem as well as level of confidence is the result of self-perceptions about being weak in using the English language. Thus the goal for these participants is to enrol in an English language course that can assist in overcoming their weaknesses.

8.8.7 Getting Good Grades

Four of the participants listed 'getting good grades' as one of the reasons for enrolling the CE1 course. One participant wrote,

"To improve my English and to get good grade in this course [sic]".

This view was supported by three other participants. One of the requirements of the course was that the students obtained a minimum grade C that was equivalent to 50 marks. Only then would they be eligible for the next level of the course which was Communicative English Two (CE2). If students were not able to do this then they had to re-enrol for the course until they were able to get the minimum grade. Some of the students had problems getting through the course and had to re-enrol for the course two or three times. Thus the participants of this study argued that the CE1 would help them get a good grade.

8.8.8 Other Reasons

Apart from all of these more imperative reasons, the participants of this study listed other reasons as well. Some of the respondents wrote, "It is a beneficial course, can contribute to improvement in grammar, pronunciation, listening, reading; students can go on CE2"; "…am interested in learning the language…"; "I can share information with others"; "I love learning English but feel shy and bored being in the same level with friends"; "…as a future teacher I have to be a good role model". There was a participant who also reiterated that "it will be

useful anywhere, I can use English to complete my assignments and get more information". These reasons were intrinsically motivated when compared to extrinsic reasons.

Clearly, the participants of this study are motivated to enrol for the CE1 course for various reasons. Some participants are extrinsically motivated while others give the reasons that are intrinsic in nature. Whatever the reasons, it can be concluded that the participants of this study have different learning needs as well as expectations. It is thus imperative to investigate if learners' needs match the planners' perceptions regarding the introduction of the Communicative English One course and learners' needs. The next section discusses this issue from the viewpoint of two key players.

8.9 History of Communicative English One

The Director of the Centre for Modern Languages who is referred to in the pages that follow as 'Az' as well as the Coordinator of CE1 or 'Nor', are asked about the introduction of the course as well as the principles that directed its design. Both the key players were not sure of the actual date the course was designed. Az thought that it might have been designed in the year 2000 when there was a review of an older course that was called English for Academic Purposes. Nor thought that it might have been in 1997 when the UPSI was upgraded from a Teacher's Training College to a University. Both of the key players did not know who the people were who sat on the planning committee.

Both the key players agreed that among the aims of the course were: (a) to enable the students to communicate well in English in a variety of contexts; (b) to emphasise the four language skills of listening, speaking, reading and writing; and (c) to help the students with their English language proficiency. Az argued that the principles that guided the design of the course were to enable students to communicate with one another, with others as well as to interact and socialise using English in a variety of context. Nor stated that as she did not sit on the panel that designed the course she did not know what principles guided the design of CE1. When Az was asked if the principles of the course met with the needs of the Malaysian Government namely, the initiative to raise the English language standard of Malaysians, he replied,

> well, we like to think so. We have been conducting this course for so many years now and we can see from some of our students. But of course there will be some good ones, there will be some moderate or average ones and there will be the weak ones. But, overall what we can see is that this course is helpful to the students as the whole.

Az perceived that the CE1 course was fulfilling the Government's "expectations to enable the citizens to be able to become proficient in more than one language". Both the key players were unclear about the history of the introduction of the CE1 course or the aims and principles that guided its design. It was possible that this uncertainty resulted from a mismatch between the implementation of the course and learning needs as well as expectations of the CE1 students. From the expressed needs and expectations experienced by the students, it was clear that the course was not meeting them to the extent believed to be desirable.

8.9.1 Communicative English One and Learning Outcomes

Both Az and Nor were asked if they were satisfied with the current learning outcomes of the CE1 course. Az declared, "Well I can't really say that I am happy but the thing is at this point of time, I would like to say that it is heading in the right direction, in producing students who are able to communicate in the English language. Actually it all falls to the individual students themselves, but then as a whole I am quite satisfied". Nor too, reiterated this view when she argued that the learning outcomes listed in the instructional plan of the CE1 were not reflected in student behaviour. She explained,

> Ok, if we look at the learning outcomes and it is listed in the instructional plan, 'yes'. But if I were to look at the students what they have actually accomplished, 'no' because basically I feel that the environment is not there and then they don't really have the opportunity to use the language. And, basically most of them, they are Malays and there are the ethnics from Sabah and Sarawak. And, most of them, they will use the Malay language to interact to each other. So, basically the learning outcomes if you look at it on paper it works fine. But if you look at how it is used, I am sorry to say that I am not very happy with the outcome.

Nor appeared to be more outspoken about the learning outcomes for CE1 students. She indicated that their outcomes did not reflect those on the instructional plan of the course. She was of the opinion that the current context did not facilitate the use of the English language. Both Az and Nor seemed to agree that they were not happy with the current learning outcomes of the CE1 students. Nor also added that the 'two hour a week' sessions were not enough for students to practise what they had learnt. Hence, there should be other activities outside the classroom where students were required to use the skills they had learnt in class.

As an extension of the earlier question, both Az and Nor were asked if the CE1 students used the skills learnt in the course outside the classroom. Az explained that some of the students did while others did not. He suggested that the students do not use English much after they had finished the course due to factors such as the interference of the mother tongue or their first language as well as their need to be accepted back into their local community. Nor suggested that only those students, who were enrolled for the B.Ed TESL program, which was the course provided for pre-service English language teachers, used effectively what they had learnt in the CE1 course. The rest of the students only used reading skills when they had to refer to reference books that were written in English. They, however, had to write their assignments in Malay, thus not using what they had been taught in English. Nor stated, "so I think this is a waste you know. But, that is the thing...the skills are not fully utilised".

Additionally, Az was of the opinion that the CE1 helped as part of the enrolled study program. He implied that some of the elements of the students' study programs were incorporated into the design of the course. This view seemed to be repeated by the students who participated in the present study. However, Nor proposed that it only helped the students to a certain extent such as when they referred to books written in English and when lecturers who were trained abroad employed English terminology to teach. She concluded that "somehow or other it does help but only to a certain extent. Not entirely because lectures here are not conducted in English".

Nor clearly articulated what she found was lacking in the CE1 course. Moreover, Nor who was not only coordinating the CE1 course but was also teaching it as well had insider access to obtaining the learning behaviours of the students in the course.

When asked what their general perception was of the students who enrolled in the CE1 course, Az listed reasons as to why students enrolled in the course, among them being that it was a compulsory course and that those who enrolled in the course did so because they were interested and wanted to learn. Furthermore, he highlighted that the students wanted to be more proficient in English. Az indicated that the CE1 students "have high hopes that the course will help them. We try our best to cater to their needs, so by the end of last semester...they were quite happy and this can be seen from the review that they gave...they

normally fill up a form, they will review the lecturers, the instruction, the aspects and all that. Aah...so normally we will get quite good feedback or review".

Nor suggested that the students of the CE1 course believed that they could survive solely, with *Bahasa Melayu* or the Malay language. She emphasized that the instructors had to deal with this attitude problem (Gill, 2005; Giridharan & Enriquez, 2002). Moreover, she indicated that the present Malay medium of instruction was not contributing towards a more positive attitude on the part of the CE1 students to learn English. She also suggested that aims of the current communicative syllabus were not constructive in enhancing the standard of English in Malaysia. She lamented,

> now let us look at our syllabus. Our syllabus is a communicative syllabus. Okay, what is communication? Communication is the ability to understand each other. So, we don't look at the grammar, we don't look at the vocabulary, as long as I can understand you, you can understand me, that's alright. And that is basically the syllabus that we are using. And, I don't understand at one end of the pole we just want it to be communicative in nature. But on the other hand we want them to be good like the native speakers.

Nor's view was that if we wanted the standard of English to improve in Malaysia, we had to re-assess the present aims and objectives of the communicative syllabus. She asserted that we had to be clear about what we expected our students to be able to do, namely, "do we want them to become competent English users, proficient English users or merely people who understand, who can carry out instructions". Nor, indicated that the present communicative syllabus had contradictory aims and objectives. It was clear from what Nor had highlighted that she was not happy with the overall learning outcomes of the CE1 course.

8.9.2 Types of Text in the CE1 Classroom

Both Az and Nor seemed to agree that the current print-based module employed in the teaching and learning process of the CE1 course was satisfactory. However, they were of the opinion that instruction should go beyond the printed text. Az indicated, "I think we have the intention in the future not to be too dependent on the print-based module. Even now, and also especially in respect to listening skills, we use the non-print material, tapes and such things. But we are planning to diversify, not to be too dependent on print-based". Nor added that although it was necessary to employ the present print-based module in the CE1 classroom, the lifeworlds of the students necessitated that the other forms of texts, were used as well. She asserted

> the era we are in now, the students don't like 'chalk and talk'. They don't read books because there is nothing interesting in the book. They like something animated. You know, they are born into this era of technology. So I personally feel that technology should be brought into class. Because that will actually get their attention...and I think they learn better, also, because it is more interesting.

Nor's observation seems to reiterate the students' views that instructors need to employ other more interesting as well as varied types of texts in the classroom (Alvermann, 2001).

When asked if multimodal texts should be employed in the teaching and learning process of the CE1, Az was in the opinion that there was nothing wrong in introducing multimodal texts as they helped students to learn better. However, he advocated that it was not desirable to be too dependent on such techniques. He claimed, "there is a risk, we tend to ignore the needs of the students and then the constraints faced by the instructors and then the external factors such as the facilities and all that". Az asserted that although multimodal texts could facilitate and aid teaching, they would never replace the teacher. Furthermore, he implied that there was the danger of technology replacing hands-on or interaction-based teaching. Nor emphasized that the instructors could not be blamed for not using multimodal texts in the CE1 classroom because there was already a module which students had to obtain and instructors had to base their teaching on. She also added that two hours a week was not enough for other types of texts. However, she used herself as an example and suggested one way where she employed multimodal texts and that was by setting tasks for students outside the classroom that would require them to use these texts. When asked to comment about the CE1 students who had problems with English language proficiency in the classroom but not when reading web pages, Nor was of the opinion that this might be so because these types of texts were interesting. She observed,

> internet is more interesting. I cannot tell for sure whether they do understand but basically they don't have problem you know even though they are not competent users of the language. But, they don't seem to have problem with the internet. It is ironic but it is true.

Nor's observation would appear to reiterate many research findings that had suggested that students who were weak in English benefited from technology and multimodal texts.

Both Az and Nor affirmed that the CE1 students used laptops, computers, notebooks and the internet. Moreover, Az noted that students used technology for independent study outside the classroom. Nor stated that the CE1 students also used the imager and power point

slides during presentations, in the classroom. Az announced, "When they [the students] go to the library they will be accessing things based on materials, references based on internet and all sort of things. So, on their own I guess the students are heading towards that" and Nor declared, "They are actually very creative. Their technology knowledge is far better than mine, they embed a lot of sound and a lot of video. They actually fully utilize technology". Nor also was of the opinion that students used technology or multimodal texts outside the classroom (Thesen, 2001, p. 133). Nor declared,

> this internet, it plays a major role in their life. I can see that some of them are actually into this virtual world, so much, that they prefer this kind of life better than their normal life.

The key players' observations regarding technology and the use of multimodal text by students are confirmed by the students' responses. Both the key players and participants in this study highlight that technology and multimodal texts are popular in students' lifeworlds.

8.9.3 Administration of Communicative English One

Az who was the Director of the Centre for Modern Languages emphasized that the most serious problem that he was facing as an administrator was lack of instructors for the course. Az complained that he needed more instructors to teach the course. He asserted,

> we don't have enough instructors to teach the course. But the numbers of students keep getting higher. We receive more and more students every semester. But the numbers of instructors are still the same.

The CE1 course was taught mainly by part-time instructors. The part-timers were usually in-service teachers from secondary schools around the university. The course was run from five o'clock in the evening. Between five and eight classes were run simultaneously. There was a class from five to seven o'clock followed by another from eight to ten o'clock.

Nor, the Coordinator of the course announced that she did not have any problems with regard to her administrative role. She said that she usually had meetings with the instructors and briefed them on what was required and expected of them, before the start of the semester and once again after the mid-semester examination. Nor considered that if everyone knew what they were supposed to do, there would be no problems. An issue that she raised was that the current two hours a week were not sufficient as the students did not really have the opportunity to practise the language. Nor suggested that time should be allocated where students could actually use what they had learnt in class. She considered the current module

would not be very helpful if all the students did was to come into class and did not continue with their learning outside the class. She also hoped that the CE1 students would realise the importance of the language and they would be motivated to improve their skills in order to become competent users of English. Az supported Nor's views by advocating that there was no end to learning a language.

8.10 Summary

The discussion in this chapter unfolds in a descriptive way to investigate two important concepts: (a) the existence of multimodal texts and technology in the CE1 learners' lifeworlds and (b) the assessment of their learning needs. The discussion begins with a brief profile of the participants who take part in the interviews in this study. It then continues with an analysis of the existence of technology and multimodal texts in the participants' lifeworlds. It is found that among the technology as well as multimodal texts used by the participants are television, radio, computer, laptop, internet, cell phone and MP3 player. These are used mainly for seeking information as well as communicating. Two types of information are sought about the use of technology or multimodal texts and they are information about world issues or general knowledge as well as information that facilitates learning. Some of the participants stated that they used technology and multimodal texts every day, whereas others stated that their low English language proficiency was a hindrance to more frequent use of technology.

The participants of this study affirmed that multimodal texts contributed to the development of English language proficiency. They also maintained that they would use such texts in the future, especially in their chosen profession, to communicate with others as well as to seek information and for general knowledge. Additionally, ten of the participants who were interviewed said that they preferred multimodal texts as they were easier to use to obtain information as well as easy to understand. Moreover, the participants also emphasized that it was less stressful to learn with multimodal texts. This was attributed to the synchronous characteristic of multimodal texts where meaning was communicated through multiple modes. Some participants termed this as 'see and hear'. The students who chose print texts declared that they did so because of the tangible and tactile nature of the texts. Hence, they could access the hard copy whenever they wanted and when it was most convenient.

The Interviews

Nearly half of the participants who were interviewed said that their teachers did not use multimodal texts in the classroom while the other half said they did. The participants who said that their teachers did not use multimodal texts were of the opinion that they might use them in the future if students requested their use. They also perceived that such texts should be employed in the classroom as the students were from the so called 'net generation' and these texts were a part of their lifeworlds. The participants of this study were also of the opinion that the use of multimodal texts in the teaching and learning process would be likely to contribute towards their improvement in the use of the English language. However, it was clear from the analysis that some participants considered that whether the teaching and learning process was interesting depended more on teaching styles or methods.

A majority of the students stated that they were happy with the CE1 course. They commented that they were being taught what they had learnt in primary school, thus the course was reinforcing their knowledge. The participants also noted when the instructors were sporting and not serious, thus learning became less stressful. In addition, most of the participants stated that the teachers were aware of student abilities and tailored the lessons accordingly to meet their students' needs. There were also students who said that they were happy with the course because they felt a sense of belonging. These students articulated that they felt comfortable in their groups and this contributed to their satisfaction with the course. Other participants said that they were happy with the course because their teachers presented them with opportunities to participate in the learning process. These students believed that participation as practice in the use of English which would ultimately help them improve their proficiency.

Although most of the participants were happy with the CE1 course, they argued that there was still room for improvement. They suggested that because the students were not proficient in English, they often found lessons boring and difficult to understand. Thus they suggested that the instructors of the course should use more varied activities such as games and the inclusion of multimodal texts. They said that they did not find current teaching methods very fulfilling and advocated that teachers should employ methods to attract greater attention as well as evoke the interest of the students. They also suggested that there should be more practice provided on the development of speaking skills.

Twelve of the 13 participants who took part in the interviews maintained that the CE1 course had helped them in their study program. It was evident from their responses that the participants realised the importance of English and saw its relevance to their other subjects. They declared that the course enhanced their understanding in their individual study programs. The participants also maintained that the CE1 course enabled them to speak with everyone in their respective faculties as well as facilitate the access to the different sources of information, especially when the reference books were in English. Some of them concluded that the course would also help them to secure better jobs in the future.

The Written Responses

From the analysis of written responses provided by about 90 participants, two groups emerged: one group emphasized that the student were satisfied with the current teaching methods and the other group said that they were not. The participants who were satisfied with the current teaching methods listed the following reasons: (a) teaching method was simple and easy to understand; (b) instructors used simple language to teach; (c) each topic was explained in detail and repeated until students understood; (d) instructors spoke slowly; (e) students were provided with opportunities to participate in the lesson; (f) instructors employed a variety of methods; (g) teaching was tailored for their level of proficiency; and (h) instructors gave their best.

Those who were not satisfied with the current teaching methods suggested the following reasons: (a) instructors did not know students better; (b) teaching methods were uninteresting; (c) teachers did not employ multimodal texts; (d) teachers used the translation method to teach (i.e. used Malay to teach English); (e) teachers did not use the translation method to teach (i.e. did not use Malay to teach English); (f) teaching methods were not contributing towards improvement; (g) difficulties were experienced in understanding instructors; and (h) the teacher's personality contributed to boredom.

The analysis of responses illustrated that the participants of this study were clear about their needs and expectations. A majority or 46 of the students listed speaking as the skill in which they needed most training. The participants identified the ability to speak proficiently as the most important skill. Seventeen participants considered that they wanted more training in listening skills. Participants' low proficiency in English resulted in their inability to

understand competent speakers of English. Thus they considered that they needed training in listening efficiently. However, the participants had not listed the development of listening skills as their most important need in learning the English language. Writing skills were chosen by 26 participants as the skill on which they needed most training. Among the reasons the participants gave for wanting more training in writing was that they were weak in this area and they needed to work more efficiently. It was evident, however, that the participants did not place as much emphasis on writing when compared to speaking. Only 10 students chose reading as the skill in which they needed more training in comparison with the other language skills.

The other skills that participants had listed in which they required more training were grammar, error analysis and academic language. In addition, participants of this study had also considered the need for: (a) simpler as well as interesting instructional techniques; (b) the use of multimodal texts in class; (c) teachers who were experts; (d) teachers who had good personalities; (e) teachers needed to improve the study program; (f) the course needed to be conducted for a longer period of time; and (g) additional activities were needed.

The participants provided various reasons for enrolling in the CE1 course. Many of the participants stated that they wanted to improve their use of the English language. It was clear that these students saw the CE1 as the catalyst in facilitating their mastery of English. In addition, they were also aware of the importance of English for themselves at the present time, for the future, as an international language, as well as for their chosen profession. Conversely, some participants stated that since Communicative English One was a compulsory course, they did not have any choice but to enrol. However, despite this reason they appreciated that the course would help them in many ways. There were participants who listed job opportunities as being instrumental in motivating them to enrol for the course. This was in line with the call by the Malaysian Government that graduates needed to become proficient in English in order to secure good jobs in both the public and private sectors.

The participants also stated that they had enrolled for the CE1 course because they wanted to communicate with speakers of languages other than *Bahasa Melayu*. They believed that the course would give them the skills to communicate with people from other countries. In relation to this reason, the participants also emphasized that if they were able to

communicate proficiently, their level of confidence would also increase. Some of the participants of the study gave greater personal confidence as the reason for enrolling in the CE1. Subsequently, getting good grades in the course and being able to go on to the next level or Communicative English Two was a further reason for enrolling in CE1. Others said that through the course, they would be able to share information with others. One or two participants asserted that they were enrolled in the course because they loved learning English. Finally, wanting to be a good role model in being able to speak fluently to their students was another reason given.

Interviews with the Director and the Coordinator

The interviews, with both the Director of the Centre for Modern Languages which offered, the CE1 course as well as the course Coordinator indicated that they were not sure about the history of the course, namely, the exact date of its introduction, its aims and objectives as well as the principles that guided the initial design of the course. However, these key players indicated that they were not happy with the present learning outcomes. Among the reasons given were that the current context did not greatly facilitate the learning of English. They had perceived that the students continued to speak in their first language. Additionally, it was also emphasised that the current two hours for learning the course were not sufficient for the students to practise what they had learnt. Moreover, they had noted that some of the students did not use the English language outside the CE1 classroom. Consequently, they considered that the CE1 course only contributed to the students' other study programs to a limited extent as some elements of these programs had been incorporated in the design of the course. Thus students would find what they studied in CE1 helpful when they searched for book references or when they had to produce assignments in English.

The Director and Coordinator also noted that the students enrolled for the course because it was compulsory. Additionally, they were of the opinion that some of the students who had enrolled for the course had very high hopes that they would improve in their command of the English language. However, other students considered that they could survive solely with *Bahasa Melayu*, the Malay Language. The Coordinator of CE1 perceived that the aims and objectives of the current syllabus were not enhancing the standard of English in Malaysia. She was in the opinion that for English proficiency to improve in

Malaysia, it was necessary to be very clear about what it was that they wanted students to be able to do.

With regard to the types of text employed in the classroom, both administrators were of the opinion that the current print-based module was satisfactory. However, they contended that there was a need to go beyond the print-text. The Director of the Centre for Modern Languages said that there was a plan for diversification in the future. The Coordinator acknowledged that there was a need for multimodal texts in the classroom as the students were born in an era of communication technology. These students did not like the methods that only employed 'chalk and talk'. Conversely, there was nothing wrong in using multimodal texts in the teaching and learning process. However, it was necessary to be very careful not to become too dependent on such texts. The Director asserted that in the enthusiasm to use such texts, it was possible to ignore learner needs or the constraints faced by the instructors as well as the unavailability of supporting infrastructure. He was of the view that communication technology should not replace hands-on and interactive teaching. Another view that was highlighted by the Coordinator of the course was that class time was not sufficient to employ multimodal texts. Thus instructors would need to set tasks outside the classroom as students did not have problems utilising multimodal texts.

The Director and Coordinator confirmed that students used laptops, computers, notebooks, and the internet for independent study outside the classroom. Technology such as the imager and multimodal text such as power point slides were used inside the classroom for presentations as well as learning. It was the view of the Coordinator of CE1 that the students were very creative and probably better than their teachers in the use of new technology.

The chapter concludes with a discussion about the administration of the course. The main problem raised by the Director in relation to the administration of the CE1 was the shortage of instructors. The Coordinator, however, highlighted that she did not encounter any problems as she had briefed the instructors on what they had to do. However, she argued that there was a need for more time outside class for students to practise what they had learnt in the CE1 course. In addition, she hoped that students realised the importance of English and were motivated to improve their use of the English language. The Director reiterated this

view by suggesting that students could aspire to learn other languages and hoped that that was the direction in which Malaysia was heading.

Concluding Comment

The setting in which this study is conducted is described by the findings in this chapter. The study unfolds in an English language learning context. The participants of this research study are a heterogeneous group made up of different ages, genders, ethnic backgrounds, state of origin, faculty, family circumstances as well as MUET level. This interviews and students' written responses confirm that they are aware of their needs as well as expectations of the CE1 course. Student interviews and written responses emphasize that technology and multimodal texts play a large role in their everyday lives. The students use technology and multimodal texts for recreation, entertainment, communication as well as learning. The participants of this research study are of the view that multimodal texts contribute to the development of English language proficiency and plan to use it in the future. The participants also added that they preferred multimodal to print texts as they encompassed all the information they needed and were easy to understand. The participants emphasized that their teachers were not currently using multimodal texts to teach. They stressed that multimodal texts should be employed in the CE1 teaching and learning process.

The interviews and written responses emphasized that participants who took part in the present research study knew what they wanted and needed in the classroom. The participants were of the opinion that the CE1 could be improved with the incorporation of a variety of teaching methods, multimodal texts and interesting activities. The participants of this research study indicated that they were happy with the teaching and learning process in the CE1 because of reasons such as: (a) simple teaching methods, (b) simple language employed by the teacher, (c) speed of communication, (d) detailed explanation, (e) opportunity for classroom participation, (f) variety of teaching methods, and (g) teaching according to students' level of performance. The participants emphasized that the following factors contributed to their dissatisfaction: (a) teachers did not understand students; (b) failure to use interesting teaching methods; (c) the use of Malay to teach English; and (d) teaching materials that were not interesting.

The participants of this study specified 'speaking' as their first choice of skill that they needed more training in. They saw the ability to speak English fluently as empowering their other actions. Listening, reading and writing were other language skills in which they needed training alongside speaking. The students were also of the view that they needed more training in grammar, error analysis and academic language. The interviews and written responses indicated that the students who enrolled for the CE1 course did so for the following reasons: (a) English was an important language; (b) CE1 was a compulsory course; (c) there were greater employment opportunities; (d) they needed to communicate widely in English; (e) they needed to boost their confidence; and (f) they sought good grades.

Chapter Nine

The Mediating Effects on Change in English Language Proficiency

PLSPath analysis is a statistical procedure that is employed to estimate path models with latent constructs assessed, and in some cases measured by multiple indicators using the Partial Least Squares (PLS) method of regression analysis. According to Sellin (1989, p. 1) PLS was

> technically simple, provides high-speed or 'instant' estimation specifically for large path models and, most important, does not require stringent distributional assumptions, such as observational independence and normality of residuals.

PLSPath analysis was sometimes referred to as 'soft modelling' as it was an appropriate statistical technique for research conditions where mild supplementary assumptions were required (Sellin, 1989). The PLSPath analysis technique was also suitable for smaller models and smaller data sets and for the explanatory analysis of the situation under survey.

Sellin (1989) indicated that PLSPath models involved both observed or manifest variables (MVs) and unobserved or latent variables (LVs). The inner model specified relationships between the LVs. The outer model specified the relationships between MVs and LVs. According to Sellin (1989) PLSPath was also sometimes referred to as a 'prediction oriented' approach as the

> PLS algorithm basically aims at optimal least squares prediction of endogenous LVs and MVs, subject to constraints imposed by the specification of inner and outer model relationships...that predictor specification as applied to inner and outer model relationships constitutes an integral part of the theoretical form of PLS models.
>
> (Sellin, 1989, p. 11)

The basic PLS design assumed "recursive inner structures. That is, path models forming a causal chain system with uncorrelated residuals". (Sellin,1989, p. 18). In other words, each inner model relation formally constituted a multiple regression equation, and the inner model coefficients were estimated by Ordinary Least Squares (OLS) regression applied to each inner model equation separately (Sellin, 1989, p. 21).

In Chapter 6, it is argued that in this study the data are best analysed by employing two different approaches: (a) single-level path analysis; and (b) two-level Hierarchical Liner Modelling (HLM). In both approaches, the aims are to provide an explanation of a situation

that occurs in the real world and how to estimate the magnitudes of the significant effects. However, the two approaches undertake these tasks in slightly different ways as becomes apparent in this chapter and the chapter that follows. The path analysis models that are tested include both direct and indirect or mediating effects. The multilevel models that are tested consider both direct and moderating or cross-level interaction effects. Consequently, the two approaches provide similar but to some extent different explanations of the situation under consideration.

The models of individual factors influencing the impact of multimodal texts on the development of English language proficiency (discussed in Chapter 7), indicate that there are 21 latent variables (LVs). They are listed in Table 9.1 in which the acronym of each latent variable is given, followed by its descriptive name and the manifest variables and their descriptors that are associated with each latent variable. In addition, information is given on whether the latent variable is formed in the 'inward mode', or reflected in the 'outward mode', or involves the 'unity mode' where there is only one manifest variable. The outcome variable is the English Proficiency Test score on Occasion 3 (EPT3). The LV 'ENGNENG' was dropped from the analysis because no causal paths could be initiated due to the low fit indices. There were initially 49 manifest variables (MVs) but the variable 'Background' was dropped when 'ENGNENG' was dropped from the analysis. The variables used in the models in this chapter are presented in Table 9.1, together with their associated manifest latent variables.

In the inner model, 20 latent variables are hypothesised with each of them involving one or more MVs. Therefore, in the examination of the final causal model, there are 20 LVs and 48 MVs. The hypothesised path model for estimating the impact of multimodal texts on the development of English language proficiency is presented in Figure 9.1. The latent variables in the path diagram can be grouped into two classes: (a) those that do not receive causal inputs from any other variable in the path diagram referred to as exogenous variables, and (b) those that receive one or more such causal inputs referred to as endogenous variables. In the path diagram presented in Figure 9.1, there are five exogenous variables and 15 endogenous variables. The exogenous variables are: (a) AGE; (b) ETHNIC; (c) STATE; (d) FACULTY; and (e) GENDER. The endogenous variables are: (a) MUET; (b) NEEDS; (c) STCAP; (d) USETEC1; (e) MMLP1; (f) FRENGUS1 (g) EPT1; (h) USETEC2; (i) MMLP2; (j) FRENGUS2; (k) EPT2; (l) USETEC3; (m) MMLP3; (n) FRENGUS3; and (o) EPT3.

Table 9.1
Variables in the Individual Level Model

Latent Variables	Mode	Description	Manifest Variables	Description	Coding
AGE	Unity	Respondent's age	years	Age in years	19 - 29
GENDER	Unity	Respondent's gender	sex	0=Male 1=Female	0=M 1=F
ETHNIC	Inward	Respondent's ethnicity	emalay echinese eindian eindigenous	Malay Chinese Indian Indigenous	1=Malay 0=Not Malay 1=Chinese 0=Not Chinese 1=Indian 0=Not Indian 1=Indigenous 0=Not Indigenous
STATE	Inward	Respondent's State of Origin	northern central southern eastern east	Northern States Central States Southern States Eastern States East Coast	1=Northern 0=Not Northern 1=Central 0=Not Central 1=Southern 0=Not Southern 1=Eastern 0=Not Eastern 1=East 0=Not East
FACULTY	Inward	Faculty the respondent is enrolled in	fsscihum fcscihdv fict fbusecon fartmus	Faculty of Social Sciences and Humanities Faculty of Cognitive Science and Human Development Faculty of Information and Communication Technology Faculty of Business and Commerce Faculty of Arts and Music	1=fsscihum 0=Not fsscihum 1=fcscihdv 0=Not fcscihdv 1=fict 0=Not fict 1=fbusecon 0=Not fbusecon 1=fartmus 0=Not fartmus
MUET	Unity	Malaysian University English Test band levels	mlevel	6=Very good user 5=Good user 4=Competent user 3=Modest user 2=Limited user 1=Extremely limited user	1 - 6
NEEDS	Outward	Respondent's learning needs	nagrwkcm nalrnst namotstr natccap nacullng nadiflnp	Group work and communication Learning strategies Nature and strength of motivation Teacher-centred approach Culture learning in English as a Foreign Language setting Difficulties encountered in the learning process	Rasch scores
STCAP	Unity	Attitude towards teaching approach	nastcap	Student-centred teaching approach	Rasch scores
USETEC1	Outward	Types of Technology used on Occasion one	persnl uni	Technology for personal use Technology used in the university	Rasch scores
MMLP1	Outward	Multimodal and Language Proficiency on Occasion one	frmm1 ppmmu1 ppfenus ppfedcm	Frequency of English multimodal texts use Perceptions of English proficiency for multimodal texts use Perceptions of English proficiency for university activities Perceptions of English proficiency for everyday communication	Rasch scores
FRENGUS1	Unity	Frequency of English language use for university activities on Occasion one	frengu	Frequency of English language use for university activities	Rasch scores
EPT1	Unity	English Proficiency Test on Occasion one	escore	English Proficiency Test score	Raw scores
USETEC2	Outward	Types of Technology used on Occasion two	persnl2 uni2	Technology for personal use Technology used in the university	Rasch scores
MMLP2	Outward	Multimodal and Language Proficiency on Occasion two	frmm2 ppmmu2 ppfenus2 ppfedcm2	Frequency of English multimodal texts use Perceptions of English proficiency for multimodal texts use Perceptions of English proficiency for university activities Perceptions of English proficiency for everyday communication	Rasch scores
FRENGUS2	Unity	Frequency of English language use for university activities on Occasion two	frenus2	Frequency of English language use for university activities	Rasch scores
EPT2	Unity	English Proficiency Test on Occasion two	escore2	English Proficiency Test score	Raw scores
USETEC3	Outward	Types of Technology used on Occasion three	persnl3 uni3	Technology for personal use Technology used in the university	Rasch scores
MMLP3	Outward	Multimodal and Language Proficiency on Occasion three	frmm3 ppmmu3 ppfenus3 ppfedcm3	Frequency of English multimodal texts use Perceptions of English proficiency for multimodal texts use Perceptions of English proficiency for university activities Perceptions of English proficiency for everyday communication	Rasch scores
FRENGUS3	Unity	Frequency of English language use for university activities on Occasion three	frenus3	Frequency of English language use for university activities	Rasch scores
EPT3	Unity	English Proficiency Test on Occasion three	escore3	English Proficiency Test score	Raw scores

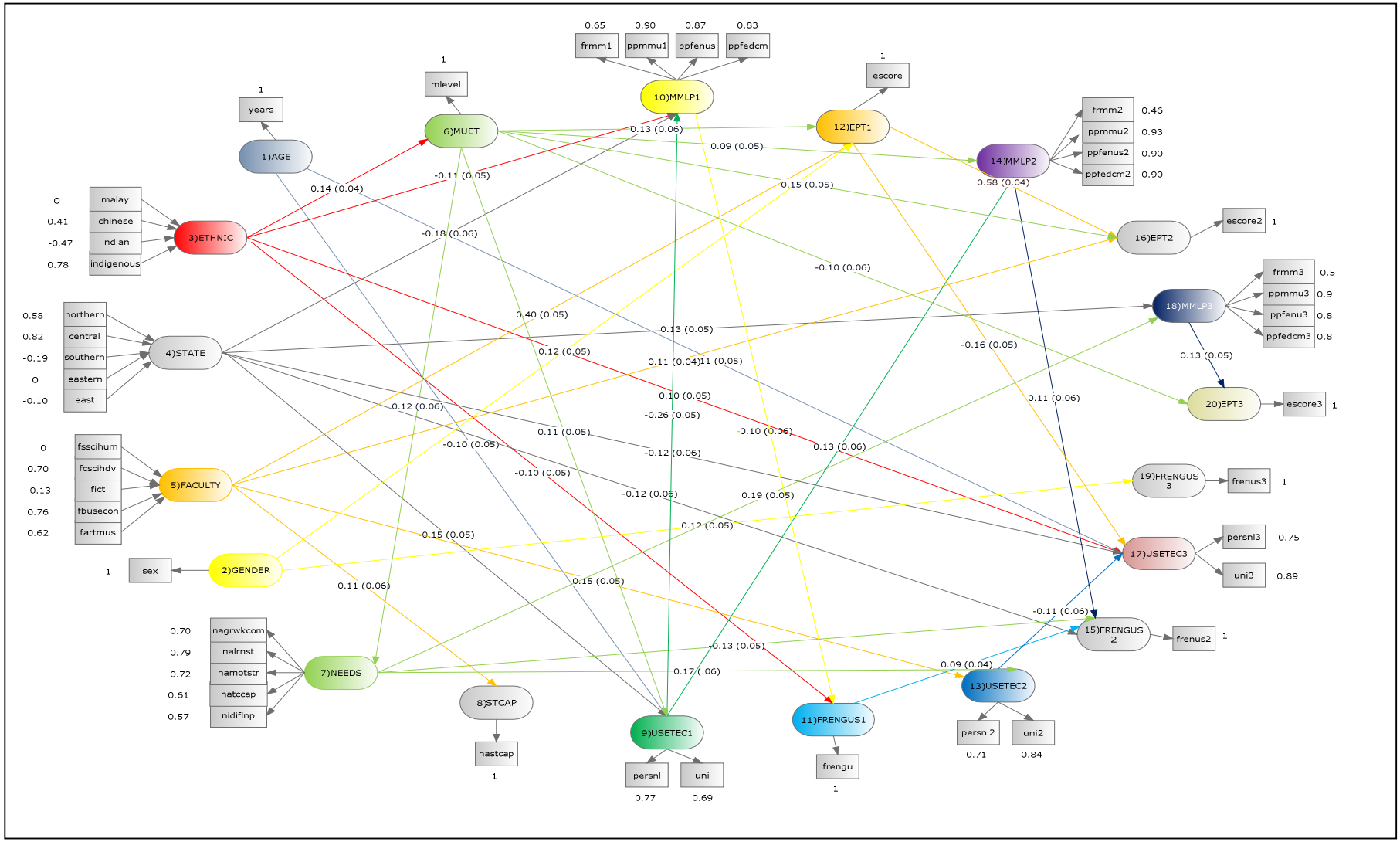

Figure 9.1. Path Model

Several variables are assessed on three occasions, namely, USETEC, MMLP, FRENGUS and EPT. The English Proficiency Test on Occasion 3 is the criterion variable. Of particular interest are the variables associated with respondents' Learning Needs (NEEDS), the Malaysian University English Test (MUET) and Attitudes towards Student-centred Teaching Approach (STCAP), although some of these variables are only examined at the initial stages of the analyses. In Figure 9.1, the manifest variables are displayed with small rectangular boxes and the latent variables are shown with oval shapes. While the path diagram presented in Figure 9.1 has a complex structure, the situation under investigation in the real world is a highly complex one, in part because it is examining change between occasions. The results of the analysis carried out employing, PLS Path Version 3.01 (Sellin, 1989) are reported in two parts: (a) the measurement model; and (b) the structural model.

9.1 Measurement Model

The measurement model or the outer model specifies the relationships between the latent variables and the manifest variables, which form or reflect the latent variable (Darmawan, 2003). These relationships are termed 'PATTERN' in the command line of the PLSPath version 3.01 program. Any manifest variable that does not contribute adequately to the formation or reflection of the latent variable is removed from further analysis.

One of the limitations of the PLSPath program is that there is no formal testing of significance (Darmawan, 2003). This is because it cannot be assumed that the conditions for the formal testing of statistical significance apply in this situation, since the students are nested within classroom groups. Moreover, the normal distribution of residuals may not apply in this exploratory analysis. However, Sellin (1989) suggested that the estimates of the standard errors through the jackknife method could be used in the examination of the significance of the results. For the statistical evaluation of PLS models, Sellin (1989) proposed the use of the 'Stone-Geisser' test of predictive relevance (see also Wold, 1982). According to Sellin (1989, p. 20) the Stone-Geisser test

> basically produces jackknife estimates of residual variances which can be used for evaluating the predictive power of inner model (structural) and outer model (measurement) relationships. Jackknife standard errors of point estimates can be obtained as a by-product.

Table 9.2

Fit Indices for the Measurement Model

Variable	Mode	Weight	Loading	JknSE	Communality	Redundancy	Tolerance
AGE	unity						
years		1	1	0	1	0	0
GENDER	unity						
sex		1	1	0	1	0	0
ETHNIC	inward						
emalay		0	0	0	0	0	0
echinese		0.41	0.40	0.13	0.16	0	0
eindian		-0.47	-0.49	0.49	0.24	0	0
eindigenous		0.78	0.78	0.12	0.60	0	0
STATE	inward						
northern		0.58	0.49	0.05	0.23	0	0.22
central		0.83	0.75	0.03	0.56	0	0.13
southern		-0.19	-0.39	0.03	0.15	0	0.14
eastern		0	0	0	0	0	0
east		-0.10	-0.35	0.03	0.12	0	0.19
FACULTY	inward						
fsscihum		0	0	0	0	0	0
fcscihdv		0.70	0.45	0.04	0.21	0.01	0.09
fict		-0.13	-0.27	0.05	0.07	0	0.02
fbusecon		0.76	0.54	0.04	0.29	0.02	0.08
fartmus		0.62	0.39	0.04	0.15	0.01	0.07
MUET	unity						
mlevel		1	1	0	1	0	0
NEEDS	outward						
nagrwkcm		0.25	0.70	0.03	0.49	0.01	0.40
nalrnst		0.27	0.79	0.03	0.63	0.01	0.51
namotstr		0.17	0.68	0.04	0.46	0.01	0.42
natccap		0.21	0.72	0.03	0.52	0.01	0.42
nacullng		0.24	0.61	0.04	0.37	0.01	0.19
nadiflnp		0.34	0.57	0.04	0.33 av:0.47	0.01	0.11
STCAP	unity						
nastcap		1	1	0	1	0	0
USETEC1	outward						
persnl		0.75	0.88	0	0.77	0.04	0.06
uni		0.50	0.69	0.03	0.47 av:0.62	0.02	0.06
MMLP1	outward						
frmm1		0.20	0.65	0.03	0.42	0.03	0.34
ppmmu1		0.37	0.90	0.01	0.82	0.08	0.63
ppfenus		0.31	0.87	0.01	0.76	0.07	0.60
ppfedcm		0.32	0.83	0.03	0.69 av:0.67	0.06	0.52
FRENGUS1	unity						
frengu		1	1	0	1	0	0
EPT1	unity						
escore		1	1	0	1	0	0
USETEC2	outward						
persnl2		0.56	0.71	0.03	0.51	0.03	0.05
uni2		0.72	0.83	0	0.70 av:0.61	0.04	0.05
MMLP2	outward						
frmm2		0.13	0.46	0.06	0.21	0.01	0.14
ppmmu2		0.39	0.93	0	0.86	0.02	0.69
ppfenus2		0.27	0.90	0	0.81	0.02	0.68
ppfedcm2		0.37	0.90	0.01	0.82 av:0.68	0.02	0.64
FRENGUS2	unity						
frenus2		1	1	0	1	0	0
EPT2	unity						
escore2		1	1	0	1	0	0
USETEC3	outward						
persnl3		0.49	0.75	0.01	0.56	0.04	0.13
uni3		0.71	0.89	0	0.79 av:0.68	0.06	0.13
MMLP3	outward						
frmm3		0.26	0.56	0.06	0.31	0.02	0.14
ppmmu3		0.34	0.92	0	0.84	0.05	0.70
ppfenus3		0.31	0.89	0.02	0.80	0.04	0.68
ppfedcm3		0.31	0.87	0.02	0.76 av:0.68	0.04	0.65
FRENGUS3	unity						
frenus3		1	1	0	1	0	0
EPT3	unity						
escore3		1	1	0	1	0	0

The basic idea of the Stone-Geisser test is

> to omit or 'blindfold' one case at a time, to re-estimate model parameters on the basis of the remaining n-1 cases, and to reconstruct or predict the omitted case value of the dependent variables using the re-estimated parameters.
>
> (Sellin, 1989, p. 22)

Fit indices, for the outer (measurement) model are presented in Table 9.2. The discussion is based on these indices.

For the outer model there are five indices that can be used to reject or delete a manifest variable from a latent variable, it reflects or forms. The five indices are: (a) weight; (b) loading, (c) communality, (d) redundancy, and (e) tolerance. Weight indicates the strength of the regression type relationship between MVs and LVs with the inward or formative mode. The relationship between a manifest variable and its corresponding LV with the inward mode can be considered adequate if the value of the weight is equal to or larger than 0.10, with the assumption of a sample size of approximately 400 (Sellin and Keeves, 1997). Where a weight of zero is recorded, the MV acts as the reference variable in the use of dummy variable regression analysis. However, in the LV Faculty, the ICT group is very small. Moreover, for the variable ETHNIC only the Malay group is of a substantial size. The weights for the hypothesised outer model in the present research study for variables ETHNIC, STATE and FACULTY that have inward modes are all higher than 0.10. The weights for ETHNIC are: (a) echinese (0.41); (b) eindian (-0.47); and (c) eindigenous (0.78). For the variable STATE, the weights are: (a) northern (0.58); (b) central (0.83); (c) southern (-0.19); and (d) east (-0.10). The weights for FACULTY are: (a) fcscihdv (0.70); (b) fict (-0.13); (c) fbusecon (0.76); and (d) fartmus (0.62). These indices indicate that the weights are adequate for the three latent variables.

A loading indicates the strength of the factor analytic type relationship between MVs and LVs with the outward or reflective mode. It is commonly accepted (see Sellin and Keeves, 1997), that a loading of 0.40 or larger can be considered adequate. The outward mode type relationships between the MVs and LVs in the path diagram indicate loadings larger than 0.40 for NEEDS, USETEC1, MMLP1, USETEC2, MMLP2, USETEC3 and MMLP3. For NEEDS the loadings for the MVs are: (a) nagrwkcm (0.70); (b) nalrnst (0.79); (c) namotstr (0.68); (d) natccap (0.72); (e) nacullng (0.61); and (f) nadiflnp (0.57). The loadings for USETEC1 are: (a) persnl (0.88); and (b) uni (0.69). MMLP1 has loadings of: (a) frmm1 (0.65); (b) ppmmu1 (0.90); (c) ppfenus (0.87); (d) ppfedcm (0.83). For the variable USETEC2, the loadings for the manifest

variables are: (a) persnl2 (0.71); (b) uni2 (0.84). The MVs for the latent variable MMLP2 have the following loadings: (a) frmm2 (0.46); (b) ppmmu2 (0.93); (c) ppfenus2 (0.90); (d) ppfedcm (0.90). For the variable USETEC3, the loadings for the MVs are: (a) persnl3 (0.75); and (b) uni3 (0.89). The loadings for the variable reflecting MMLP3 are: (a) frmm3 (0.56); (b) ppmmu3 (0.92); (c) ppfenus3 (0.89); and (d) ppfedcm3 (0.87).

Communality indicates the strength of the outer model and is calculated as the squared correlation between the MVs and their corresponding LVs. The strength of the outer model is measured by the average communalities (see Falk, 1987) which is considered to be adequately strong if the average communality value is greater than 0.30. The outer model communality in the present research study is adequately strong as the average communalities for all the variables are greater than 0.30.

Redundancy indicates "the joint predictive power of inner model and outer model relationships as estimated for a given data set" (Sellin, 1989, p. 12). Tolerance indicates the possibility of seriously damaging multicollinearity within the corresponding block of MVs (Darmawan, 2003). A tolerance value of 0.50 or higher indicates possible multicollinearity within a block of MVs. However, these effects can be considered damaging for the formative (inward) mode but not for the reflective (outward) mode. Consequently, although some of the tolerance indices in the hypothesized model for latent variables in the outward or reflective mode are higher than 0.50, this is of no concern if the LV is not in the formative or inward mode.

9.2 Structural Model

The inner (structural) model results specify the strength of relationships between one latent variable and other latent variables. The term 'MODEL' is used in the command line of the program to specify the inner model relationships. Darmawan (2003) argued that any path between the latent variables which does not show an adequate influence can be removed from further analysis. For the inner model, there are four indices that can be used as the criteria to delete a path or relationship in the model, namely beta, jackknife mean, jackknife standard error and correlation. Beta refers to the standardised path coefficient representing a given direct effect. Jackknife mean or 'JknMean' is the mean of the path coefficients obtained in each jackknife cycle, that is, the mean of the path coefficients obtained when each case is omitted in turn. The jackknife standard error which is referred to as 'JknStd' is the estimated error

associated with each path coefficient. Correlation is the zero-order correlation between a given predictor LV independent or dependent LV.

In obtaining the final structure of the inner model, it is generally recommended that direct paths with ß<0.10 can be removed because such values show a less than adequate effect in the estimation of a relationship between two LVs (see Sellin and Keeves, 1997). The larger the ß value, the larger is the effect in the path model. This process is repeated until all paths that are not of adequate size are removed. The indices for the inner model are presented in Table 9.3. All the variables in the inner model except for FRENGUS1 and MUET have betas that are greater than or equal to 0.10. Furthermore, a critical ratio can be obtained in this research study by dividing the estimate (beta) by its jackknife standard error (Darmawan, 2003). Thus as a level of adequacy of for the critical ratio, any ratio exceeding 1.66 is considered as adequate.

The discussion in the following section is carried out with reference to the path diagram in Figure 9.1. The path diagram in Figure 9.1 is developed based on the Causal Framework presented in Chapter 3. The Causal Framework in Chapter 3 contains the following antecedent variables that are exogenous: (a) AGE, (b) GENDER, (c) ETHNICITY, (d) FACULTY, and (e) STATE. In addition there are two other antecedent variables that are endogenous: (a) MUET, and (b) NEEDS. There are also several variables that are measured on three occasions: (a) Multimodal and Language Proficiency (MMLP), (b) Use of Technology (USETEC), (c) Frequency of English Language Use for University Activities (FRENGUS), and (d) English Proficiency Test (EPT). The crux of this research study is to investigate the effects of all these variables on English language proficiency on the three occasions with EPT3 as the criterion variable, since EPT3 involves students' EPT scores on Occasion 3. In order for the investigation of change between occasions to take place, it is necessary to adhere to a system that enables the analysis of the effects of the latent variables on the criterion variable. The discussion that follows seeks to explain the effects of the variables under study with strict reference to the three main facets of this study: (a) language proficiency, (b) needs assessment, and (c) the effectiveness of learning language communication skills through the use of multimodal texts. These analyses are based on the causal relationships of (b)⟶(c)⟶(a). While there are very many causal path relationships involved in the path diagram shown in Figure 9.1, the discussion that follows is specifically interested in the effects of the latent variables on change with respect to those latent variables that are measured on the three occasions.

Table 9.3

Path Indices for PLS Path Inner Model

Variable	Beta	JknMean	JknStd	Correlation
Malaysian University English Test (MUET)				
Respondent's Ethnicity (ETHNIC)	0.14	0.14	0.04	0.14
Learning Needs (NEEDS)				
Malaysian University English Test (MUET)	0.12	0.12	0.06	0.12
Student-centred Teaching Approach (STCAP)				
Faculty Respondent's is enrolled (FACULTY)	0.11	0.11	0.06	0.11
Use of Technology on Occasion 1 (USETEC1)				
Respondent's Age (AGE)	-0.10	-0.10	0.05	-0.11
Respondent's State of Origin (STATE)	-0.15	-0.15	0.05	-0.15
Malaysian University English Test (MUET)	0.11	0.11	0.05	0.12
Multimodal and Language Proficiency on Occasion 1 (MMLP1)				
Respondent's Ethnicity (ETHNIC)	-0.11	-0.11	0.05	-0.09
Respondent's State of Origin (STATE)	-0.18	-0.18	0.06	-0.12
Use of Technology on Occasion 1 (USETEC1)	-0.26	-0.26	0.05	-0.23
Frequency of English Language use for university activities on Occasion 1 (FRENGUS1)				
Respondent's Ethnicity (ETHNIC)	-0.10	-0.10	0.05	-0.09
Multimodal and Language Proficiency on Occasion 1 (MMLP1)	-0.10	-0.10	0.06	-0.09
English Proficiency Score on Occasion 1 (EPT1)				
Sex of Respondent (GENDER)	0.12	0.12	0.05	0.08
Faculty Respondent's is enrolled (FACULTY)	0.40	0.40	0.05	0.40
Malaysian University English Test (MUET)	0.13	0.13	0.06	0.15
Use of Technology on Occasion 2 (USETEC2)				
Faculty Respondent's is enrolled (FACULTY)	0.15	0.15	0.05	0.15
Learning Needs (NEEDS)	0.17	0.17	0.06	0.17
Multimodal and Language Proficiency on Occasion 2 (MMLP2)				
Malaysian University English Test (MUET)	0.09	0.09	0.05	0.11
Use of Technology on Occasion 1 (USETEC1)	0.13	0.13	0.06	0.14
Frequency of English Language use for university activities on Occasion 2 (FRENGUS2)				
Respondent's State of Origin (STATE)	0.11	0.11	0.05	0.11
Learning Needs (NEEDS)	-0.13	-0.13	0.05	-0.12
Frequency of English Language use for university activities on Occasion 1 (FRENGUS1)	0.09	0.09	0.04	0.10
Multimodal and Language Proficiency on Occasion 2 (MMLP2)	0.11	0.11	0.06	0.10
English Proficiency Score on Occasion 2 (EPT2)				
Faculty Respondent's is enrolled (FACULTY)	0.11	0.11	0.04	0.36
Malaysian University English Test (MUET)	0.15	0.15	0.05	0.26
English Proficiency Score on Occasion 1 (EPT1)	0.58	0.58	0.04	0.65
Use of Technology on Occasion 3 (USETEC3)				
Respondent's Age (AGE)	-0.11	-0.11	0.05	-0.11
Respondent's Ethnicity ETHNIC)	0.10	0.10	0.05	0.11
Respondent's State of Origin (STATE)	-0.12	-0.12	0.06	-0.15
English Proficiency Score on Occasion 1 (EPT1)	-0.16	-0.16	0.05	-0.15
Use of Technology on Occasion 2 (USETEC2)	-0.11	-0.11	0.06	-0.11
Multimodal and Language Proficiency on Occasion 3 (MMLP3)				
Respondent's State of Origin (STATE)	0.13	0.13	0.05	0.14
Learning Needs (NEEDS)	0.19	0.19	0.05	0.19
Frequency of English Language use for university activities on Occasion 3 (FRENGUS3)				
Sex of Respondent (GENDER)	0.12	0.12	0.06	0.12
English Proficiency Score on Occasion 3 (EPT3)				
Malaysian University English Test (MUET)	-0.10	-0.10	0.06	-0.10
Multimodal and Language Proficiency on Occasion 3 (MMLP3)	0.13	0.13	0.05	0.12

The indices presented in Table 9.3 record that the Beta coefficients are numerically greater than or equal to 0.10 for all the variables except for the effect of MUET on MMLP2 and FRENGUS1 on FRENGUS2. Moreover, each Beta coefficient retained in the final model is at least 1.66 times its jackknife standard error, which is the cut-off value for retaining or removing a path. The next

section discusses the analysis with reference to Figure 9.1 and the estimated effects shown in Table 9.3. The discussion focuses on the effects of the Latent Variables included in the path model on the endogenous variables in the model. The discussion is categorised into four sections: (a) the effects OF the exogenous variables, (b) the effects OF the two antecedent variables, (c) the effects ON and OF the process variables or variables that change across occasions, and (d) the variables that have effects ON the English Proficiency Test on one or more of the three occasions. The numbers in parentheses associated with the acronyms indicate the position of a latent variable in the path diagram recorded in Figure 9.1 and are provided to assist in reading the diagram.

9.2.1 The Effects OF the Antecedent Variables.

Variables that do not receive any causal inputs from any other variable in the path diagram are called 'exogenous variables'. These variables have straight arrows leading away from them and never towards them. There are five exogenous variables in the present research study and they are: (a) AGE, (b) GENDER, (c) ETHNIC, (d) STATE, and (e) FACULTY. These five variables are independent variables and have their causal sources outside the path diagram.

The Effect of Age

Respondents' age (1)AGE influences

- use of technology on Occasion 1 (9)USETEC1(β= -0.10)
- use of technology on Occasion 3 (17)USETEC3 (β= -0.11)

On Occasion 1 of this research study, the older students appear to use technology less compared to the younger students. On Occasion 2, students' age does not seem to influence the use of technology but this changes on Occasion 3 when (1)AGE again influences Use of Technology, (17)USETEC3. On Occasion 3, it is found that the older students are once again using technology less compared to the younger students. It is possible that the older students who enrol for the Communicative English One (CE1) course are not as technologically minded as the younger students. Hence, this may affect how much or how often they access technology both for personal use and in university courses. At the time of enrolment for the CE1 course, the older students do not seem to be using technology much but it is possible that during the course, they

use it more often for various reasons such as doing their assignments, searching for materials and references as well as communicating with their family and friends who are back in their respective States. Thus at Occasion 2, (1)AGE does not appear to influence Use of Technology noticeably and it is possible that both the younger and older students are using technology equally. However, this changes on Occasion 3 when the Use of Technology by older students decreases once again. Data for Occasion 3 is collected three months after students have completed the CE1 course and returned from their semester break. The analysis indicates that once instruction for the CE1 course is over, the older students do not employ technology as much as the younger students do. The older students appear to be only using technology more during the semester. It can be concluded that the older students in the CE1 course are more likely to use technology only when the situation clearly warrants it.

The Effect of Gender

Respondents' gender (2)GENDER influences

- English Proficiency Test scores on Occasion 1 (12)EPT1 (β= 0.12)
- Frequency of English language Use for University Activities on Occasion 3 (19)FRENGUS3 (β= 0.12).

On Occasion 1, female students obtain higher English Proficiency Test (EPT) scores compared to the male students. As data for Occasion 1 of this research study, is collected at the entry point to the CE1 course, the analysis indicates that the female students are more proficient in the English language when they first enrol for the course. In addition, the female students are also using English for university activities more than the male students on Occasion 3 of this research study. It is possible that higher English proficiency levels result in the female students choosing courses that involve in higher frequency of English Language use for university activities. What is interesting in this finding is that, female students appear to be using English more after the semester break for university-related activities than do the male students.

The Effect of Ethnicity

Respondents' ethnicity (3)ETHNIC influences

- Malaysian University English Test (6)MUET (β= 0.14)
- Multimodal and Language Proficiency on Occasion 1 (10)MMLP1 (β= -0.11)

- Frequency of English Language Use for University Activities on Occasion 1 (11)FRENGUS1 (β= -0.10)
- Use of Technology on Occasion 3 (17)USETEC3 (β= 0.10)

The variable Ethnicity (3)ETHNIC largely involves Indigenous students (*l*=0.78) compared with Malay students (β=0.00) since there are very few Chinese and Indian students in the sample. Although, Respondents' ethnicity (3)ETHNIC appears to have an effect on Malaysian University English Test (6)MUET (β= 0.14), Multimodal and Language Proficiency on Occasion 1 (10)MMLP1 (β= -0.11), Frequency of English Use for University Activities on Occasion 1 (11)FRENGUS1 (β= -0.10) and Use of Technology on Occasion 3 (17)USETEC3 (β= 0.10), due to the total number of respondents from each ethnic group, the findings cannot be considered as clearly significant in the present research study.

The Effect of State

The Respondents' State influences

- Use of Technology (9)USETEC1 on Occasion 1 (β= -0.15)
- Multimodal and Language Proficiency (10)MMLP1 on Occasion 1 (β= -0.18)
- Frequency of English Language Use for University Activities (15)FRENGUS2 on Occasion 2 (β= 0.11)
- Use of Technology (17)USETEC3 on Occasion 3 (β= -0.12)
- Multimodal and Language Proficiency (18)MMLP3 on Occasion 3 (β= 0.13)

Of the five States, the analysis indicates that the students from the East Coast States have a small negative weight when compared to the other States (*w*= -0.10). The students from the Central States have the greatest weight (*w* = 0.82), followed by the students from the Northern States (*w* = 0.58) and the Southern States (*w* = -0.19). The Eastern States are the dummy variable in this analysis. Thus the analysis indicates that on the LV STATE the Northern and Central States are contrasted with the East Coast and Southern States. The effects of the latent variable STATE on the Use of Technology on Occasion 1 (β= -0.15) and on Occasion 3 (β= -0.12) are small and negative, but are not recognisable on Occasion 2. This indicates that the students from the East Coast and Southern States initially and after the semester break use technology more than the students in the Northern and Central States

The Multimodal and Language Proficiency of students from the East Coast States and Southern States are also high on Occasion 1 compared to students from the Central and Northern States. This is understandable because the more students use Technology, the more proficient they become. Hence, on Occasion 1, the State that students come from influences two variables, namely, (9)USETEC1 and (10)MMLP1. This relationship with MMLP however, changes on Occasion 3. On Occasion 3, although the Use of Technology (17)USETEC3 remains higher for students from the East Coast States and Southern States as indicated by the path coefficient relationship (β= -0.12), the students' Multimodal and Language Proficiency (18)MMLP3 improves significantly for the Northern and Central States as can be seen by the path coefficient (β= 0.13). It is probable that during the CE1 course, the Northern and Central students are made aware of the many advantages of using Technology for their studies as well as recreation. In addition, *Universiti Pendidikan Sultan Idris* is strategically located in a place where there is ample access to Technology during and after lectures. The University has also made Technology readily accessible to the students inside the University. It is probable that these factors have motivated the students from the Northern and Central States to improve significantly in their Multimodal and Language Proficiency on Occasion 3, relative to the East Coast students.

The Effect of Faculty

The Respondents' Faculty (5)FACULTY influences

- Student-centred Teaching Approach (8)STCAP (β= 0.11)
- English Proficiency Test scores (12)EPT1 on Occasion 1 (β= 0.40)
- Use of Technology (13)USETEC2 on Occasion 2 (β= 0.15)
- English Proficiency Test scores (16)EPT2 on Occasion 2 (β= 0.11)

The latent variable of faculty is formed out of several manifest variables. The large Faculty of Social Sciences and Humanities (fsscihum) is chosen as the dummy variable and has zero weight (*w*= 0.00) in the formation of the latent variable. While the Faculty of Information and Communication Technology has a small negative weight (*w*= -0.13), it has so few students that it cannot meaningfully be taken into consideration in any discussion. However, the weights used for the Faculty of Business and Commerce (*w*= 0.76), Cognitive Science and Human Development (*w*= 0.70) and Arts and Music (*w*= 0.62) are in effect contrasted with the Faculty of Social Sciences and Humanities.

The data for English Proficiency Test (EPT) scores on Occasion 1 is collected at the entry point of the CE1 course. This is before students receive any formal instruction. Hence, their EPT scores reflect students' English language proficiency level when they first enrol for the CE1 course. The analysis indicates that students' faculty influences their English Proficiency Test scores on Occasion 1 (12)EPT1 (β=0.40) and on Occasion 2 (16)EPT2 (β= 0.11). These results indicate that where initially the students were performing at a lower level on the English Proficiency Test in the Faculty of the Social Sciences and Humanities, after the three months of the CE1 course, they had improved in their EPT performance, giving rise to a smaller relationship. After a further three months over the semester break, the variable Faculty no longer had a significant effect. Thus it can be argued that the students in the Faculty of Social Sciences and Humanities had improved in the English Language Proficiency, to the extent that the differences between the faculty groups were no longer significant. It would appear that these students in the Social Sciences and Humanities were clearly benefiting from the course.

9.2.2 What are the Direct Factors that Influence Change in EPT3?

The path diagram in Figure 9.1 indicates that two variables influence English Proficiency Test on Occasion 3 (EPT3) directly:

- Malaysian University Entrance Test (MUET) (β= -010)
- Multimodal and Language Proficiency on Occasion 3 (MMLP3) (β= 0.13)

The variable Multimodal and Language Proficiency at Occasion 3 (18)MMLP3 is found to have a positive path relationship (β=0.13) to English Proficiency Test Performance at Occasion 3 (20)EPT3 in contrast to the lack of such relationships at both Occasions 1 and 2. This suggests that the continuing use of the procedures of Multimodal and Language Proficiency appear to have facilitated the development of English language proficiency during the course.

Moreover, the relationship recorded for the effects of performance on the Malaysian University English Test (6)MUET on EPT1 prior to the commencement of the course that is estimated by the path coefficient to be small and marginally significant (β= 0.13) indicates that the students who perform well on the Malaysian University English Test (MUET) are the students who are showing the higher levels of English Language Proficiency on Occasion 1, after allowance for the influences of the other factors involved in the causal path model. Moreover, a similar effect operates between the Malaysian University English Test and performance on

English Proficiency Test at Occasion 2 (β= 0.15). However, at Occasion 3 the effect of MUET on English Proficiency Test (20)EPT3 is negative (β= -0.10). This indicates that after the three month semester break the students who do well on the EPT at Occasion 1 and Occasion 2 are no longer the higher performers at Occasion 3, while the students who initially are lower on MUET, gain in performance after the holidays. This suggests that the lower performers maintain their efforts to improve their performance after completing the course.

Since the MMLP variable does not have significant effects on EPT at Occasion 1 and Occasion 2, as shown above and shows a significant effect at Occasion 3, it is likely that the use of Multimodal and Language Proficiency (MMLP) that measures the frequency of Multimodal texts usage in English and the students' perceptions of English proficiency influences this noticeable turnaround in performance of those students who are lower performers in the Malaysian University English Test (MUET).

What are the Mediated Factors that Operate through MMLP3 to Influence Change in EPT3?

It is seen from Figure 9.1 that two variables have a mediated effect on EPT3 operating through MMLP3, namely (a) (7)NEEDS (β= 0.19) and (b) (4)STATE (β= 0.13). Neither NEED nor STATE influences EPT3 directly. These effects can be shown diagrammatically.

(a) NEEDS $\xrightarrow[(\beta= 0.19)]{}$ MMLP3 $\xrightarrow[(\beta= 0.13)]{}$ EPT3

(b) STATE $\xrightarrow[(\beta= 0.13)]{}$ MMLP3 $\xrightarrow[(\beta= 0.13)]{}$ EPT3

In order to understand better these two mediated effect, it is useful to answer two questions.

(1) What are the influences of learning needs on other variables?

(2) What are the factors that influence change in Multimodal and Language Proficiency across occasions?

9.2.3 What is the Influence of Learning Needs on other Variables?

As was mentioned in the previous section, a mediating effect of (7)NEEDS through MMLP3 on EPT3 is recorded in the path diagram presented in Figure 9.1. Thus the learning needs of the students indirectly influence their English Language Proficiency test scores on Occasion 3. Hence, it is important to investigate the effect of (7)NEEDS on other variables.

The learning needs of the Communicative English One (CE1) students influence

- Use of Technology (13)USETEC2 on Occasion 2 (β= 0.17)
- Frequency of English Language Use for University Activities (15)FRENGUS2 on Occasion 2 (β= -0.13)

Students' Learning Needs (7)NEEDS influences Use of Technology (13)USETEC2 on Occasion 2 (β= 0.17). Students with a higher level of Learning Needs, use technology more for university activities (uni) and for personal use (persnl) on Occasion 2 of this research study. This is understandable because at Occasion 2 of this research study, students have just completed their CE1 course. Having regularly used technology for the completion of assignments, searching for materials and references as well as communicating with family and friends who are back in their respective home States, during the CE1 course, the students are likely to continue using technology until they leave for their semester break.

Similarly, students' Learning Needs (7)NEEDS also influences the Frequency of English Language Use for University Activities (15)FRENGUS2 on Occasion 2 (β= -0.13). It is interesting to note that students with higher Learning Needs use English less frequently for University Activities on Occasion 2. It is probable that even though students use technology on Occasion 2, they use *Bahasa Melayu* and not English because of their study program requirements. However, it is also probable that students do not use English for University Activities frequently but do so for other activities. Moreover, even though students with higher Learning Needs do not Use English frequently for University Activities on Occasion 2, their Multimodal and Language Proficiency (18)MMLP3 improves on Occasion 3 (β=0.13), suggesting that these students continue to use technology as well as Multimodal Texts in the English language during the holidays. In this way, Learning Needs have a mediating effect on EPT3 operating through MMLP3. This indicates that the CE1 students' English language proficiency improves in line with their learning needs.

9.2.4 What are the Factors that Influence Change in Multimodal and Language Proficiency?

The effects associated with NEEDS and STATE and Multimodal and Language Proficiency on Occasion 3 are transmitted through this variable to influence English Language Proficiency on Occasion 3.

One important aspect of this research study is to investigate change in the variables that are measured over three occasions and in particular to examine the variables that influence change over time. Before continuing with the discussion, it is necessary to make a distinction between Use of Technology (USETEC) and Multimodal and Language Proficiency (MMLP). In the present research study, the variable USETEC investigates personal use of technology as well as use of technology for university activities. This variable does not investigate whether the English language is employed for both of these activities. All this variable seeks to investigate is if students use technology and for what purposes. Hence, students may use technology but may do so in their first language or their mother tongue. It is the variable MMLP that seeks to investigate whether English language is used by the students when they operate the various multimodal technologies.

The variables that influence Multimodal and Language Proficiency on Occasion 1 (MMLP1) are:

- Respondents' ethnicity (3)ETHNIC (β= -0.11)
- State of origin (4)STATE (β= -0.18)
- Use of Technology on Occasion 1 (9)USETEC1 (β= -0.26)

The analysis indicates that the Malay students performed higher on Multimodal and Language Proficiency on Occasion 1 (MMLP1) and the Indigenous students recorded at a lower level on Multimodal and Language Proficiency. Although Respondents' ethnicity (3)ETHNIC (β= -0.11) appears to have an effect on MMLP1, due to the total number of respondents from each ethnic group, the findings cannot be considered as clearly significant in the present research study. The Malay students form a majority of the respondents. There were 18 indigenous students, 3 Chinese and 1 Indian student out of the total 316 respondents in the present research study.

On Occasion 1, for the variable (4)STATE (β= -0.18), the analysis indicates that the students from the East Coast and Southern States record a higher level of response on Multimodal and Language Proficiency compared to the students from the Northern and Central

States. This indicates that when the students enrolled for the Communicative English One (CE1) course, the students from the East Coast and Southern States began the course with a higher Multimodal and Language Proficiency level compared to the students from the other States.

The analysis indicates that Use of Technology on Occasion 1 (9)USETEC1 (β= -0.26) influences Multimodal and Language Proficiency on Occasion 1 (MMLP1). The negative coefficient indicates that on Occasion 1 the respondents of the present research study who were using technology more were not doing so in the English language.

The variables that influence Multimodal and Language Proficiency on Occasion 2 (MMLP2) are:

- Malaysian University English Test (6)MUET (β= 0.09)
- Use of Technology on Occasion 1 (9)USETEC1 (β= 0.13)

On Occasion 2, the effect of the variable (4)STATE on MMLP is found to disappear. The findings indicate that on Occasion 2, the students who have higher MUET band levels also have higher Multimodal and Language Proficiency scores. Thus the students who have lower MUET band levels have lower scores on Multimodal and Language Proficiency. It can be argued that after experiencing the CE1 course, the students who have higher MUET band levels are employing the English language to operate various multimodal technologies and hence, their Multimodal and Language Proficiency improves. The students who have lower MUET band levels continue not to use the English language when operating multimodal technologies.

The path coefficient for the Use of Technology on Occasion 1 (9)USETEC1 (β= 0.13) indicates that USETEC1 influences MMLP2 on Occasion 2. It is probable that the CE1 course brings about greater awareness to the CE1 students of the benefits of the use of technology, to work in the English language. Thus the students who use technology less perform at a lower level on Multimodal and Language Proficiency, while the students who use technology more perform at a higher level on MMLP on Occasion 2. It is also likely that after experiencing the CE1 course, these students are using the English language more with multimodal technologies, thus resulting in a higher level of MMLP on Occasion 2.

The variables that influence Multimodal and Language Proficiency on Occasion 3 (MMLP3) are:

- State of origin (4)STATE (β= 0.13)
- Learning Needs (7)NEEDS (β= 0.19)

The analysis indicates that the effect of (4)STATE (β= 0.13) on MMLP is recorded on Occasion 3. The Northern and Central State students, who record lower Multimodal and Language Proficiency on Occasion 1, are on Occasion 3 recording higher Multimodal and Language Proficiency compared to the East Coast and Southern State students. It is probable that the CE1 course brings awareness to students from all the states about the importance of employing the English language when operating multimodal technologies. However, on Occasion 3, the students from the Northern and Central States appear to have recognised this more strongly and use the English language when using multimodal technologies. This results in an increase in their MMLP score. The students from the East Coast and Southern States who began with a higher MMLP when they first began the course appear to have fallen behind compared to their peers from the other States.

Importantly, on Occasion 3, the students who have higher learning needs (7)NEEDS (β= 0.19) have higher Multimodal and Language Proficiency compared to students with lower learning needs. It is possible that students with higher learning needs use technology more as well as use English more frequently during the semester break compared to those with fewer learning needs.

The analysis emphasises two important findings: (a) Respondents' State of origin; and (b) students' Use of Technology influences their Multimodal and Language Proficiency. Consequently, change is recorded over the three occasions. The path coefficient for Respondents' State of origin indicates a reversal on Occasion 3. The Northern and Central States perform better on Multimodal and Language Proficiency compared to the East Coast and Southern States on Occasion 3. The opposite happens on Occasion 1. Similarly, there is also a reversal for USETEC on Occasion 2. On Occasion 1, the analysis indicates that the students who use technology less have higher Multimodal and Language Proficiency scores. However, this changes on Occasion 2. On Occasion 2, the students who use technology less, have lower Multimodal and Language Proficiency scores compared to students who use technology more, who have higher Multimodal and Language Proficiency scores.

9.3 Summary

PLSPath analysis is a statistical procedure that is employed to estimate path models with latent constructs measured by multiple indicators using Partial Least Squares (PLS) regression analyses. It is an important and efficient statistical procedure that is employed to show in an exploratory way not only the direct effects of factors but also the mediating effects of factors that influence the criterion variable.

Path analysis is carried out to investigate the three main issues of the present research study that are concerned with: (a) English language proficiency, (b) Needs assessment, and (c) the effectiveness of learning language communication skills through the use of multimodal texts. The analysis is based on the path diagram created from the Causal Framework that is presented in Chapter 3 of this thesis. The investigation is conducted to seek answers for three main questions, namely, (a) What are the Factors that Influence EPT3? (b) What is the Influence of Learning Needs on Other Variables? (c) What are the Factors that Influence Multimodal and Language Proficiency?

For the question 'What are the Factors that Influence change in English Language Proficiency?' the analysis indicates that the variables, Malaysian University English Test (MUET) and Multimodal and Language Proficiency on Occasion 3 (MMLP3) influence English Proficiency Test on Occasion 3. In addition, there are two other mediating effects:

(a) STATE⟶ MMLP3⟶ EPT3 and (b) NEEDS ⟶ MMLP3⟶ EPT3. These are the processes of change.

The findings from the path analysis for the question 'What is the Influence of Learning Needs on Other Variables?' indicate that Use of Technology on Occasion 2 (USETEC2), Frequency of English Language Use for University Activities on Occasion 2 (FRENGUS2) and Multimodal and Language Proficiency on Occasion 3 (MMLP3) are influenced by the CE1 students' learning needs.

For the final question, 'What are the Factors that Influence Multimodal and Language Proficiency? Respondents' State of origin and students' Use of Technology influence Multimodal and Language Proficiency. In addition change is recorded over the three occasions. The variable (4)STATE, indicates a reversal on Occasion 3. The Northern and Central States perform better on Multimodal and Language Proficiency compared to the East Coast and

Southern States on Occasion 3. On Occasion 1, it was the East Coast and Southern States who performed better and there was no effect recorded on Occasion 2. Similarly, there is also a reversal for USETEC on Occasion 2. On Occasion 1, the students who use technology less have higher Multimodal and Language Proficiency. However, this changes on Occasion 2. On Occasion 2, the students who use technology less, have lower Multimodal and Language Proficiency compared to students who use technology more, who have higher Multimodal and Language Proficiency scores. The variable (3)ETHNIC does not appear to influence MMLP after Occasion 1 and the influence of USETEC disappears after Occasion 2. The effect of the variable (7)NEEDS only appears after the completion of the CE1 course on Occasion 3 but it does influence USETEC on Occasion 2.

This suggests that those students who during the CE1 course and during the vacation recognise the role that technology can play in meeting their needs to raise their level of English language Proficiency, make efforts to increase their performance through the increased use of multimodal technology. As a consequence they record a higher level of achievement on the English Proficiency Test on Occasion 3.

Path analysis indicates that there are significant group mediated effects across occasions. These effects recorded in this exploratory analysis needs to be examined further as the direct group effects may also lead to indirect cross-level interaction moderating effects. The investigation of these moderating effects is carried out by employing hierarchical linear modelling and this is discussed in Chapter 10.

Chapter 10

The Moderating Effects on Change in English Language Proficiency

Many traditional statistical procedures are inadequate in the analysis of data because the structure of the data is hierarchical. The single level models employed in most statistical analyses disregard the hierarchical nature of data collected with regard to factors such as students' characteristics when students are nested within classrooms and within schools. Treating hierarchical data as single level data can result in the production of standard errors that are too small in ordinary least squares regression analysis unless the so-called 'design effects' are incorporated into the analysis in the testing for statistical significance. This commonly leads to a higher probability of rejection of a null hypothesis. Thus analysing the data at a single level can result in flawed findings as well as seriously biased estimates of effect.

The need to recognise hierarchical data structure is also important in educational settings when the research study seeks to investigate how the students' characteristics and the use of multimodal technology influence learning over time. In the context of the present research study, the data are nested within two levels: (a) Level 1 which is the occasion, and (b) Level 2 – the individual or student level. Hence, it is necessary to use statistical procedures that can model the nature of the data structure. The use of Hierarchical Linear Modelling (HLM) can overcome the limitations of the more traditional single-level statistical analysis. HLM allows the analysis of two or three levels in the data structure with separate sub-models. These sub-models express relationships between variables within a given level and in addition specify how variables at the higher level can influence relations occurring at the lower level. Such effects are referred to as cross-level interaction effects and involve the effects of factors at the higher level moderating effects recorded at the lower level. A two-level hierarchical model is used in the present research study to examine the effect of the Communicative English One (CE1) students' characteristics including the use of multimodal technology in influencing their learning over three occasions. Through the examination of the data at two levels, an explanation of the effects operating across levels in the situation under investigation can be advanced. The examination of moderating effects in this chapter complement the mediating effects examined in the previous chapter to provide a more substantial explanation than can otherwise be obtained. The HLM6.0 (Bryk & Raudenbush, 1992) program is used in the analyses.

10.1 Variables included in the Model

Level 1 data are collected at three time points, namely, (a) when the students first enrol for the Communicative English One (CE1) course, (b) when they complete the course, and (c) when they return from their semester break. There is a three month interval between each of these time points. The Level 1and Level 2 variables are presented in Table 10.1.

The aim of the present research study is to identify if change variables, use of technology, multimodal texts use in English, as well as frequency of English use for both university and personal activities influence the English Proficiency Test scores across the three occasions. The conceptual model for this analysis is presented in Figure 10.1 and these change variables operate at Level 1, while the explanatory variables operate at Level 2, together with their moderating effects on the variables operating at Level 1, that are not shown in Figure 10.1.

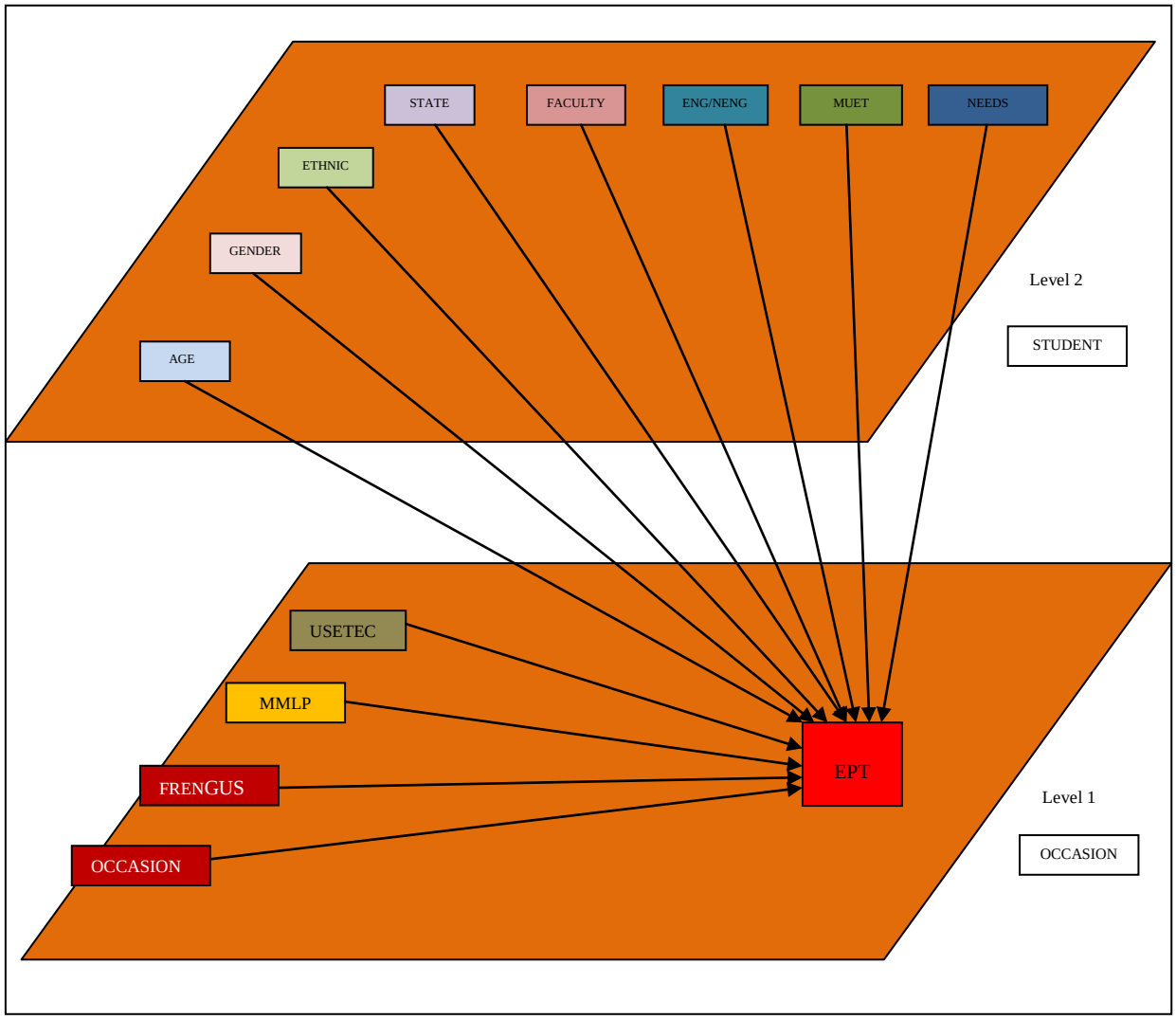

Figure 10.1. Diagrammatic Model for the 2-Level Hierarchical Linear Model

An important feature in the examination of change using hierarchical linear modelling in the analysis of change in performance on the English Proficiency Test is that at Level 1 it is possible to include as explanatory variables those variables that involve the Use of Technology (USETEC), Frequency of English Use for University Activities (FRENGUS) and Multimodal and Language Proficiency (MMLP) that are also measured on the three occasions. However, the restriction of the collection of the data to three occasions, limit the number of such variables that can be introduced into the analysis to the estimation of only two random effects.

Table 10.1

Level 1 (Occasion) and Level 2 (Student) Variables

Variable	Description	Coding	
Level 1-Occasion			
STID	Student ID	1, 1, 1 2, 2, 2 3, 3, 3	
OCC	Occasion	0 = Occasion 1 1 = Occasion 2 2 = Occasion 3	
T1	Time 1	Dummy variable	
T2	Time 2	1 = Time 2	0 = Not Time 2
T3	Time 3	1= Time 3	0 = Not Time 3
Process and Change Variables			
USETEC	Use of Technology	Rasch scale	Factor scores
MMLP	Multimodal and Language Proficiency	Rasch scale	Factor scores
FRENGUS	Frequency of English Use for University Activities	Rasch scale	Factor scores
EPT	English Proficiency Test Scores (refer to Appendix 1.2 for score range)	Raw scores	
Level 2- Student Characteristics			
STID	Student ID	1…316	
AGE	Age	19 years to 29 years	
GENDER	Student's gender	0= Male 1= Female	
ETHNIC	Ethnic background Malay Chinese Indian Indigenous	 Dummy variable 1=Chinese 1=Indian 1=Indigenous	 0= Not Chinese 0= Not Indian 0= Not Indigenous
STATE	State of origin: Northern (Perlis, Kedah, Penang, Perak) Central (Kuala Lumpur, Selangor, Melaka) Southern (Negeri Sembilan, Johor) Eastern (Pahang, Kelantan, Terengganu) East Coast (Sabah, Sarawak)	 1=Northern 1=Central 1=Southern Dummy variable 1=East	 0= Not Northern 0= Not Central 0= Not Southern 0= Not East
FACULTY	Faculty students come from: Faculty of Social Sciences and Humanities Faculty of Cognitive Science and Human Development Faculty of Information and Communication Technology Faculty of Business and Commerce Faculty of Arts and Music	 1=fsscihum 1=fcscihdv Dummy variable 1=fbusecon 1=fartmus	 0=Not fsscihum 0= Not fcscihdv 0= Not fbusecon 0= Not fartmus
ENG/NENG	Family language background: ENG : English-speaking NENG : Non-English-speaking	1=English speaking	0=Non-English-speaking
MUET	Malaysian University English Test	1=Extremely limited user 2=Limited user 3=Modest user 4=Competent user 5=Good user 6=Very good user	
NEEDS	Learning Needs: GRWKCM : Group work and communication LRNST : Learning strategies MOTSTR : Nature and strength of motivation TCCAP : Teacher-centred approach STCAP : Student-centred approach CULLNG : Culture learning in a foreign language context DIFFLNP : Difficulties encountered in a language learning process	 Rasch scale	 Factor scores

HLM does not provide for the formation of latent variables (Darmawan, 2003). Hence, factor scores are calculated for each construct involved in the models using SPSS17.

Consequently, many variables are in the standardised form (Pedhazur, 1997), except for the three variables AGE, GENDER and MUET. Age is assessed as student's age in years. GENDER is a categorical variable with 'male' coded as 0 and 'female' coded as 1. MUET is the entry point band level on the Malaysian University English Test at which the students were enrolled for the CE1 course and is coded with the possible range of 1- 6. For the main analysis in this study the outcome or criterion variable English Proficiency Test (EPT) is examined. The EPT is administered on three occasions of this research study to identify students' proficiency levels. The test is marked using the procedures provided by the CE1 course Coordinator (Chapter 7 gives a detailed description of the test). The analysis of the two-level HLM model is undertaken in stages. The first stage involves running the fully unconditional model to obtain the estimates of the amounts of variance that are available at the two levels in the model. The fully unconditional model or null model is equivalent to a one-way ANOVA with occasion as the treatment level and with random effects (Raudenbush & Byrk, 2002). The reasons why it is first necessary to run the unconditional model are: (a) it enables the variance in the outcome measure to be partitioned into its within-group and between-group components; (b) the estimated variance components provide the benchmarks that are used to examine the reduction in explained variance as Level-1 and Level-2 predictors are added to the model under examination; (c) estimates such as the confidence interval for the grand mean as well as the reliability of the criterion variable of the English Proficiency Test (EPT) can be calculated (Raudenbush & Byrk, 2002); and (d) the estimates of the initial values of the deviance involved in the maximum likelihood estimation of effects are calculated. The subsequent analysis is undertaken using models that reduce the estimates of the deviance with respect to the number of parameters involved in the models under examination. It is the reduction in the deviance, rather than the increase in the variance explained as variables are added in the analysis that assesses the fit of successive models to the data in order to identify the best fitting model.

10.2 Unconditional Model

The fully unconditional two-level model is specified by the following equations:

Level-1 Model.

$$Y_{ij} = \beta_{0j} + r_{ij} \qquad [1]$$

where:

Y_{ij} is the EPT scores for student *j* on occasion *i;*
β_{0j} is the mean EPT scores for student *j* across the *i* occasions*;*
r_{ij} is the random error on occasion *i* for student *j*.

In the above equation, EPT scores for student *j* on occasion *i* are considered to be equivalent to the student mean score across occasions plus a random error term effect. In other words, the fully unconditional model assumes no differences in the EPT scores between students on different occasions at Level-1. It is assumed that the Level-1 error, $r_{ij,}$ is normally distributed with a mean of zero and a constant Level-1 variance, σ^2 (Bryk & Raudenbush, 1992).

Level-2 Model:

$$\beta_{0j} = \gamma_{00} + u_{oj}$$

[2]

where:

β_{0j} is the intercept for student *j*, obtained from the Level 1 model;
γ_{00} is the EPT score across students (the estimated grand mean value in the population),
u_{oj} is the unique random effect associated with student *j*.

In the Level-2 equation, the EPT score for student *j* is considered to be equivalent to the mean across all students and all occasions plus a random error effect. In other words, the fully unconditional model assumes no differences in the EPT scores between students at Level-2. It is assumed that the random error effect associated with student *j*, u_{oj}, is normally distributed with the mean of zero and variance τ_{oo}.

Substituting the Level-2 equation into the Level-1 equation yields the combined model

$$Y_{ij} = \gamma_{oo} + u_{oj} + r_{ij} \qquad [3]$$

The variance of the outcome is stated to be (Bryk and Raudenbush ,1992),

$$VAR(Y_{ij}) = VAR(u_{oj} + r_{ij}) = \tau_{oo} + \sigma^2 \qquad [4]$$

Estimating the null model is an important preliminary step in the hierarchical analysis. It produces a point estimate and confidence interval for the grand mean, γ_{00}. Furthermore, it also

provides information about the variability of the outcome variable at each level (Darmawan & Keeves, 2002). The σ^2 parameter represents the within-group (Level-1) variability, and τ_{oo} is the between-group (Level-2) variability (Bryk & Raudenbush, 1992). The HLM results for the null model are presented in Table 10.2. The intra-class correlation (rho) – ρ can be calculated for the unconditional model with the following formula.

$$\rho = \frac{\tau_{oo}}{\tau_{00} + \sigma^2} = \frac{31.96}{31.96 + 143.19} = \frac{31.96}{175.15} = 0.18$$

Thus approximately 18 per cent of the variance in the EPT scores can be attributed to Level-2 differences (student characteristics), while the remaining 82 per cent is related to occasion-level differences. The reliability estimate of 0.40 indicates that the EPT scores are adequately reliable indicators of the student mean scores.

Table 10.2

Fully Unconditional Model for English Language Proficiency (ELP) as the Criterion

Final Estimation of Fixed Effects

Fixed Effect	Coefficient	Standard Error	t-ratio	DF	Approx p-value
For INTRCPT1, B0					
INTRCPT2, G00	44.61	0.50	88.83	315	0.000

Final Estimation of Variance Components

Random Effect	Reliability	Standard Deviation	Variance Component	DF	Chi-square	p-value
INTRCPT1, U0	0.40	5.65	31.96	315	525.91	0.000
level-1, R		11.97	143.19			

Statistics for Current Covariance Components Model

Deviance	7555.04
Number of Parameters	2

The 95 per cent confidence interval for the grand mean or CI_{95} is indicated by

$\gamma_{oo} \pm 1.96(se)$.

$\therefore\ CI_{95} = 44.61 \pm 1.96(0.50) = 44.61 \pm 0.98 = (43.63, 45.59)$.

The null hypothesis that there are no differences in the mean EPT scores between students (i.e. $\tau_{oo} = 0$) can be rejected since $p < 0.05$ for the estimated value of 31.96 units. In this context, there

is considerable variance between students' scores to be explained. The deviance is a measure of model fit and the deviance associated with the null model is 7555.04 with two parameters estimated in the first stage of analysis. The smaller the deviance, the better the fit of the model to the data. The assumption of homogeneity of variance ($\mathbf{H}_o$) is that the variance within each of the individuals is equal. If the variances are not homogenous, they are said to be heterogeneous. The test of $\mathbf{H}_o$ is based on Level-1 variance (chi-square statistic: 525.91; degrees of freedom: 315 and p-value: 0.000). The results indicate the existence of variability within 316 students in terms of Level-1 residual variance. This is because $p < 0.05$ and hence $\mathbf{H}_o$ is rejected and it is concluded that the variation between the Level-1 residuals is significant. The existence of heterogeneity of variance may indicate possible misspecification of the Level 1 models. The null model is clearly not adequately specified.

The hierarchical model that is examined at successive stages is based on those results obtained from the SPSS17, LISREL8.0 and PLSPATH analyses. The limitations of these statistical procedures as single level techniques are acknowledged and the possibility of the misspecification of a hierarchical model based on those results cannot be ignored (Darmawan, 2001). However, little relevant research is available to serve as a sound theoretical and empirical basis for the specification of a hierarchical Two-level Model of English Language Proficiency Scores on a Three Occasions Model. Because of the complexity of the model, the PLSPATH3.0 results are considered to be an appropriate basis for selecting potential predictors at both Level-1 and Level-2 in the HLM analyses.

In order to specify the Level-1 model, variables that are found to influence the EPT scores directly at the individual level from the PLSPATH results are entered into the equation one by one according to the magnitudes of the path coefficients starting from the strongest path. Subsequently, the occasion level predictors are also entered into the equation. Results are then examined and any coefficients that are found not to be significant are removed from the model and the next potential variable is entered into the equation. The input is altered accordingly and the data are reanalysed. These steps are repeated step by step until a final Level-1 model with only the significant effects included is obtained. In each run, an exploratory analysis is also performed to check the possibility of each Level-2 variable being included in the model.

A dummy variable is a numerical variable used in regression analysis to represent subgroups of the sample in a study. Generally, '0' and '1' are used as dummy variable codes.

Dummy variables are employed because they enable the use of a single regression equation to represent multiple groups. An advantage of using the '0,1' dummy-coded variable is that even though it is a nominal-level variable it can be treated statistically like an interval-scale variable. In the present research study, dummy variables are used for 'T1', 'T2', T3', 'ETHNIC', 'STATE', 'FACULTY and ENGNENG'.

From this step, it is found that only two variables at Level-1, the occasion level, Occasion (OCC) and Multimodal and Language Proficiency (MMLP) have significant effects on English language proficiency (EPT) scores. It is found that the other change variables, namely USETEC and FRENGUS do not have significant effects at Level-1. In order to investigate the factors influencing the cross-level relationships associated with OCC and MMLP, a series of exploratory analyses are undertaken using the HLM6.0 software. This leads to the specification of the final model.

It is important in the present research study to investigate the effect of occasion on the outcome variable EPT. The thrust of this study is to examine the effectiveness of the CE1 course with respect to factors such as English language proficiency, learning needs and the effectiveness of learning language communication skills through the use of multimodal texts. Data are collected on three occasions: (a) at the start of the CE1 course, (b) at the end of the CE1 course, and (c) three months after the students had completed the CE1 course. The analysis of the Final Occasion Model enables the investigation of whether student characteristics influence English language learning over the three occasions.

10.3 Final Model for Change over Three Occasions

The next stage is to examine a final model that is obtained by estimating the Level 2 variables that influence the intercept β_{oj} and then the Level-2 variables that influence the Occasion slope β_{1j} in the analysis. The exploratory analysis sub-routine of HLM6.0 is used to check for possible Level-2 variables that may have significant effects. Student level variables are entered one by one according to the magnitudes of their t-values shown in the exploratory analysis results. These steps are repeated step by step until a final model with only significant effects at both levels is obtained (Darmawan & Keeves, 2001). After adding the significant Level-1 and Level-2 variables, the model is specified by the following equations.

Level-1 Model

$$Y_{ij} = \beta_{0j} + \beta_{1j} *(OCC) + \beta_{2j} *(MMLP) + r_{ij} \quad [5]$$

Level-2 Model

$$\beta_{0j} = \gamma_{00} + \gamma_{01} *(FSSCIHUM) + \gamma_{02} *(FCSCIHDV) + \gamma_{03} *(FBUSECON) + \gamma_{04}*(FARTMUS) + \gamma_{05}*(MUET) + \gamma_{06}*(GENDER) + u_{0j} \quad [6a]$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}*(EAST) + \gamma_{12}*(FCSCIHDV) + \gamma_{13} *(FBUSECON) + \gamma_{14} *(FARTMUS) + \gamma_{15} *(MUET) + \gamma_{16} *(GENDER)+ u_{1j} \quad [6b]$$

$$\beta_{2j} = \gamma_{20} \quad [6c]$$

By substituting the Level-2 equations (Equations 6a, 6b and 6c) into the Level-1 equation (Equation 5), the equation for the Final Occasion Model is

$$Y_{ij} = \gamma_{00} + \gamma_{10} *(OCC) + \gamma_{20}*(MMLP) + \gamma_{01}*(FSSCIHUM) + \gamma_{02}*(FCSCIHDV) + \gamma_{03} *(FBUSECON) + \gamma_{04}*(FARTMUS) + \gamma_{05}*(MUET) + \gamma_{06}*(GENDER) + \gamma_{11}*(EAST) *(OCC) + \gamma_{12}*(FCSCIHDV) *(OCC) + \gamma_{13}*(FBUSECON) *(OCC) + \gamma_{14}*(FARTMUS) *(OCC) + \gamma_{15}*(MUET) *(OCC) *(MMLP) + \gamma_{16}*(GENDER) *(OCC) + [u_{0j} + u_{1j} *(OCC) *(MMLP) + r_{ij}]. \quad [7]$$

The equation for the Final Model illustrates that EPT scores may be viewed as a function of the overall intercept (γ_{00}), eight main effects, six cross-level interaction effects, with a random error (u_{0j}+ u_{1j} *(OCC* MMLP + r_{ij})). The eight main effects are the direct effects from occasion (OCC, γ_{10}), Multimodal and Language Proficiency (MMLP, γ_{20}), Faculty of Social Sciences and Humanities (FSSCIHUM, γ_{01}), Faculty of Cognitive Sciences and Human Development (FCSCIHDV, γ_{02}), Faculty of Business and Commerce (FBUSECON, γ_{03}), Faculty of Arts and Music (FARTMUS, γ_{04}), Malaysian University English Test (MUET, γ_{05}) and Gender of students (GENDER, γ_{06}). The six cross-level interaction effects involve EAST with (OCC, γ_{10}), FCSCIHDV with (OCC, γ_{10}), FBUSECON with (OCC, γ_{10}), FARTMUS with (OCC, γ_{10}), MUET with (OCC, γ_{10}) and GENDER with (OCC, γ_{10}).

Table 10.3 shows that two Level-1 variables have an effect on EPT scores, namely, OCC and MMLP. In addition, six Level-2 variables influence the average EPT scores overall, namely, faculty (FSSCIHUM), (FCSCIHDV), (FBUSECON), (FARTMUS), MUET bands (MUET) and Sex of Students (GENDER). Similarly, six Level-2 variables influence EPT scores through cross-level interaction or moderating effects on the direct effect of Occasion on EPT scores.

Table 10.3

Final Model for English Language Proficiency (ELP) with Occasion as the Time Predictor Variable

Final Estimation of Fixed Effects

Fixed Effect	Coefficient	Standard Error	t-ratio	DF	Approx p-value
For INTRCPT1, B0					
INTRCPT2, G00	29.44	2.65	11.13	309	0.000
FSSCIHUM GO1	4.37	2.33	1.87	309	0.061
FCSCIHDV GO2	13.73	2.72	5.04	309	0.000
FBUSECON GO3	13.97	3.05	4.58	309	0.000
FARTMUS GO4	20.25	2.91	6.97	309	0.000
MUET GO5	4.16	1.11	3.73	309	0.000
GENDER GO6	5.00	1.58	3.17	309	0.002
For OCC Slope, B1					
INTRCPT2, G10	6.82	1.14	6.00	309	0.000
EAST G11	-1.55	0.89	-1.74	309	0.082
FCSCIHDV G12	-3.48	1.21	-2.87	309	0.005
FBUSECON G13	-4.80	1.47	-3.27	309	0.002
FARTMUS G14	-7.97	1.42	-5.61	309	0.000
MUET G15	-2.33	0.77	-3.04	309	0.003
GENDER G16	-2.89	1.44	-2.5	309	0.012
For MMLP Slope, B2					
INTRCPT2, G20	0.68	0.36	1.88	309	0.060

Final Estimation of Variance Components

Random Effect	Reliability	Standard Deviation	Variance Component	DF	Chi-square	P-value
INTRCPT1, U0	0.41	7.75	60.08	309	524.01	0.000
OCC U1	0.32	4.93	24.26	309	453.73	0.000
level-1, R		10.19	103.78			

Statistics for Current Covariance Components Model

Deviance	7381.94	Change in deviance	173
Number of Parameters	4	Change in parameter	2

The 95 per cent confidence interval for the grand mean or CI_{95} is indicated by

$$\gamma_{oo} \pm 1.96(se).$$

$$\therefore\ CI_{95} = 29.44 \pm 1.96(2.65) = 29.44 \pm 5.19 = (24.25, 34.63).$$

The null hypothesis that there are no differences in the mean EPT scores between students averaged across occasions (i.e. $\tau_{oo} = 0$) can be rejected if ($p < 0.05$). In this context, there is considerable variance between students' scores still to be explained. If compared with the null model, there is a reduction in the deviance by 173 with an additional 2 parameters estimated. Since the deviance is an indication of model fit and the smaller the deviance, the better the fit, it can be concluded that the Final Model has a better fit. The test of $\mathbf{H}_o$ based on Level-1 variance

(chi-square statistic: 524.01; degrees of freedom: 309 and p-value: 0.000) indicates an existence of variability within 316 students in terms of Level-1 residual variance. This is because $p < 0.05$ and hence $\mathbf{H}_o$ is rejected and it is concluded that the variance of the Level-1 residuals is significant. For OCC, the test of $\mathbf{H}_o$ (chi-square statistic: 453.73; degrees of freedom: 310 and p-value: 0.000) indicates that there is also evidence of variability for the 316 students in terms of the residual variance of Occasion since $p < 0.05$. Thus $\mathbf{H}_o$ is rejected and it is concluded that the residual variance for Occasion is significant and further factors and their effects can be found to extend the explanatory model.

The results of the analysis recorded in Table 10.3 show that the slope of the variable Occasion (OCC) is positive (γ_{10}=6.82) and highly significant indicating that in general, students improve in their ELP scores as a result of the CE1 course, over time. Moreover, the slope of Multimodal and Language Proficiency (MMLP) is also positive and significant (γ_{20}=0.68) indicating that these students who are higher in proficiency in this area are also found to be performing at higher levels on the English Language Proficiency Test. These two results are of considerable importance in this study. They indicate that undertaking the CE1 course has beneficial effects on English Language Proficiency. In addition, the introduction of the idea of developing Multimodal and Language Proficiency during the course also has a beneficial effect. However, different groups of students have different initial levels of performance on the English Language Proficiency Test at the start of this course and different groups of students gain in proficiency to different extents during the course.

High Performing Groups at Commencement of the Course

The following findings are recorded for this analysis.

(1) Girls perform at a higher level than boys since GENDER (γ_{06}=5.00), with girls coded '1' and boys coded '0', has a significant effect.

(2) Students in higher bands on the Malaysian University English Test (γ_{05}=4.16) perform at a higher level than students in lower band levels.

(3) Students from different faculties perform at different levels and can be listed in order of the sizes of effects: Arts and Music (γ_{04}=20.25), Business and Commerce (γ_{03}=13.97), Cognitive Science and Human Development (γ_{02}=13.73) and Social Sciences and Humanities (γ_{01}=4.37),

with the remaining faculty group, Information and Communication Technology (γ =zero) as dummy variable performing at a lower level (γ_{00}=29.44).

The effects of characteristics of the different groups are best shown using graphs that present change in English Language Proficiency over time. While the conditions under which change can occur differ over the period from Time 1 to Time 2 when students are engaged in the CE1 course for a semester and the period from Time 2 to Time 3 during a semester break of three months, the slopes of the graphs of change in proficiency values with respect to time are averaged across the two time periods in the figures presented in this section. In a later section the effects operating during the two time periods are considered separately. Moreover, the figures are simplified to show significant effects of interest, with other effects held constant in the presentation of each diagram.[1]

Effects of Gender on Occasion Slope

The results of the analysis presented in Table 10.3 provide evidence of the effects of Gender on change in English Language Proficiency over time as is shown in Figure 10.2. On Occasion 1 in this study, the female students obtain higher EPT scores than the male students. However, on Occasion 3, the male students are found to perform slightly better than the female students. It is likely that the male students become more aware of the importance of proficiency in the English Language when using multimodal technologies. Hence, when the male students undertake and complete the course and are on their three month semester break, it is probable that they use more multimodal technologies in the English language compared to the female students and as a consequence they improve in their English language proficiency, not only during the course but also during the semester break. This effect is given in Table 10.3 by γ_{16}= -2.89, where the negative sign indicates that it is the boys (coded 0) compared to the girls (coded 1) who gain more in performance over time. Moreover, the graph also indicates that the girls improve in English Language Proficiency over time, but not as rapidly as the boys.

1 The information available is interpreted in the figures in ways that are arguable.

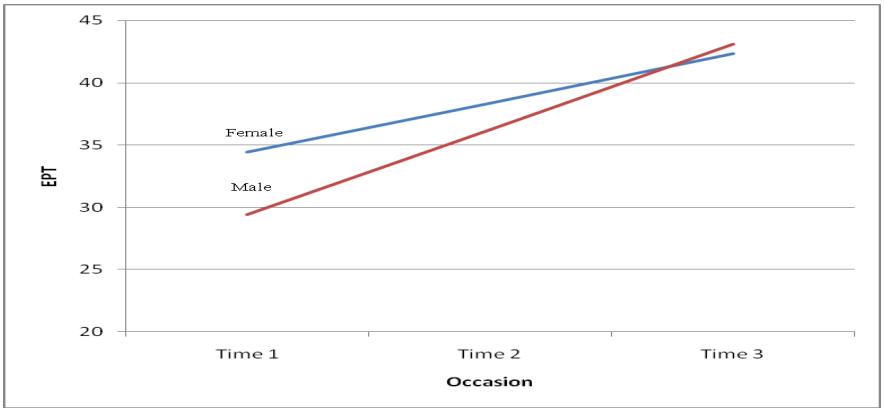

Figure 10.2. The Moderating Effects of Gender on the Influence of Occasion on English Language Proficiency

The Effects of MUET on Performance

The analysis shows that while the students in the higher MUET bands do better initially than the students in the lower MUET bands, it is the students in the lower bands on the Malaysian University English Test who improve more in their English Language Proficiency over time. The negative sign for this effect, given by γ_{15}= -2.33, indicates that it is the lower performing students who gain more over time. Initially, they are below the higher performing group, but over time as a result of participating in the CE1 course overcome this initial deficiency as can be seen in Figure 10.3.

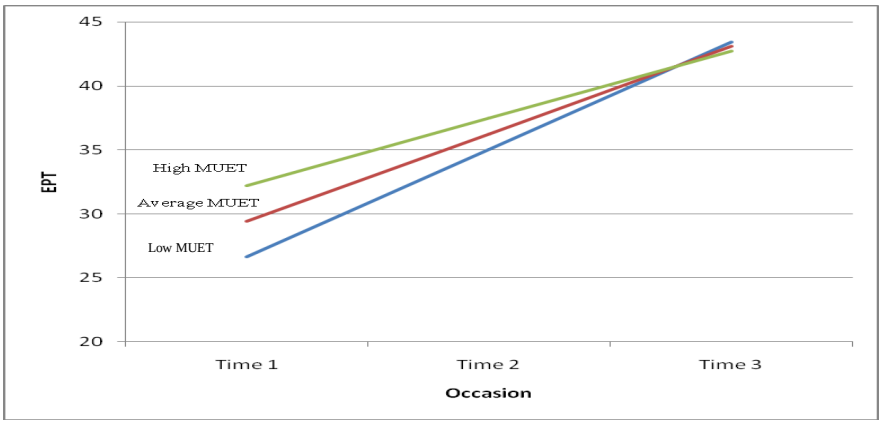

Figure 10.3. The Moderating Effects of Malaysian University English Test Performance on the Influence of Occasion on English Language Proficiency

It is probable that the students who are initailly enrolled with lower MUET bands become aware of the importance of English language proficiency and are more motivated compared to

the other students to improve in their band level of language proficiency. The students who enrol for the CE1 Course with average MUET bands also appear to improve moderately over the three occasions. An interesting finding in the present research study is that the students who enrol in the course with higher MUET bands are found not to gain as much in their English langauge proficiency over time as do their colleagues. The Final Occasion Model indicates that the students with the lower MUET bands have benefited more from the CE1 instruction and possibly from greater use of multimodal technology, but this effect is controlled for in the analyses by the variable MMLP.

The Effects of Faculty

Besides MUET and Gender, the Final Model with the slope of Occasion as the outcome variable shows that the FACULTY students come from has an effect on their development of English Language Proficiency over time.

Figure 10.4 presents the findings that show the moderating effects of FACULTY groups on the change in English Langauge Proficiency arising from the conduct of the CE1 course. The students from the Faculty of Social Sciences and Humanities, Faculty of Cognitive Science and Human Development, Faculty of Business and Commerce as well as the other Faculty of Information and Communicative Technology improve in their English Langauge Proficiency over the three occasions. However, the students from the Faculty of Arts and Music who begin the CE1 course with an initially higher level of English Language Proficiency appear to decline slightly in their langague proficiency during and after the CE1 course. The students from the Social Sciences and Humanities, Cognitive Science and Human Development and Business and Commerce as well as the other Faculty of Information and Communication Technology probably need to have to read materials and resources for their courses in the English langauge. Furthermore, they are likely to be employing more English language to operate multimodal technologies compared to students from FARTMUS. This contributes to their English language development. The students from FARTMUS are probably not reading or employing as much multimodal technologies in the English langauge compared to their peers in the other faculties because of the nature of their study program. They are more inclined towards the ARTS and MUSIC where they are probably experiencing a more ‘hands-on’ approach in their courses. This may be the reason why these students decline slightly in their English Langauge Proficiency.

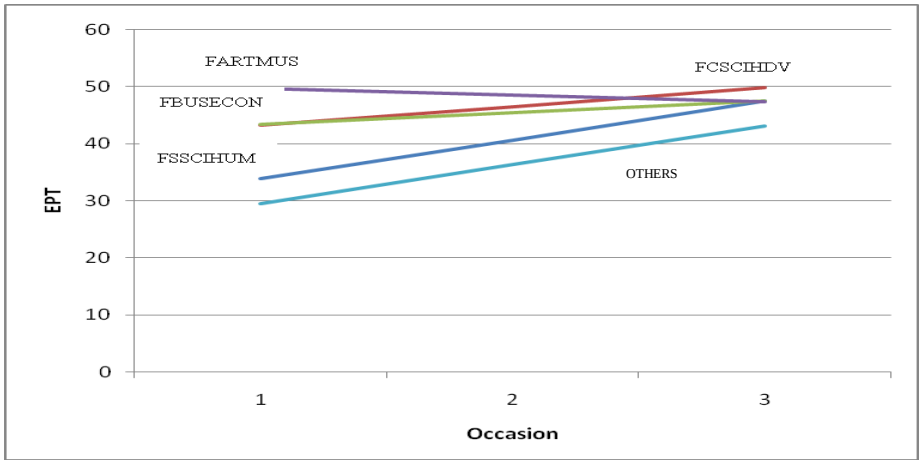

Figure 10.4. The Moderating Effects of Faculty on the Influence of Occasion on English Language Proficiency Over Time

Effects of State

The East Coast States that some of the students come from, appear to be the only region that has a significant effect on English language proficiency. The students from the East Coast States appear to improve only moderately compared to the other State groups, who perform better in their English Language Proficiency over time. It is probable that the students from the East Coast States were already very aware of the importance of using technologies that result in a lesser degree of improvement (γ_{11}= -1.55) in their English Language Proficiency over time.

10.4 Changes Between Time 1 and Time 2 and Time 3 on EPT Performance

The findings presented in the previous section warrant further examination and the sections that follow address the differences between the two periods related to Time 2 and Time 3. First, there is the question concerned with the identification of the factors that influence change between Time 1 and Time 2 (T2), after allowance is made for the effect of change between Time 1 and Time 3 (T3). Second, there is the question concerned with the identification of the factors that influence change between Time 1 and Time 3 (T3) after allowance is made for the effects of change between Time 1 and Time 2 (T2).

The answers to three questions require the analyses and the estimation of effects by the replacement of the variable Occasion (OCC) in the previous analysis through the use of two

dummy variables: T2 to represent the difference in EPT performance between Time 1 and Time 2, and T3 to represent the difference in EPT performance between Time 1 and Time 3. In these analyses, performance at Time 1 is set as the base time of reference for the assessment of change. The use of dummy variables in this way follows the discussion provided by Pedhazur (1982, pp. 274-289) on the use of dummy variables. As a consequence, the performance of the sub-groups of interest can be estimated from two separate analyses and the factors that influence the changes of interest can be examined in the results presented below and can be considered in a more detailed way. It is important to recognise that the simple examination of raw scores is clearly inadequate, because of the relatively lower reliabilities of the different scores.

10.4.1 Factors Influencing Change in EPT Performance from Time 1 to Time 2

In order to examine the effects of T2, a model for the effects at T2 controlled for T3 is tested. The model is specified by the following equations.

Level-1 Model

$$Y_{ij} = \beta_{0j} + \beta_{1j}*(T2) + \beta_{2j}*(T3) + \beta_{3j}*(MMLP) + r_{ij} \quad [8]$$

Level-2 Model

$$\beta_{0j} = \gamma_{00} + \gamma_{01}*(FCSCIHDV) + \gamma_{02}*(FBUSECON) + \gamma_{03}*(FARTMUS) + \gamma_{04}*(MUET) + u_{0j} \quad [9a]$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}*(FBUSECON) + \gamma_{12}*(FARTMUS) + \gamma_{13}*(MUET) + \gamma_{14}*(GENDER) + u_{1j} \quad [9b]$$

$$\beta_{2j} = \gamma_{20} \quad [9c]$$

$$\beta_{3j} = \gamma_{30} \quad [9d]$$

By substituting the Level-2 equations (Equations 9a, 9b, 9c and 9d) into the level-1 equation (Equation 8), the Final Model equation is

$$Y_{ij} = \gamma_{00} + \gamma_{10}*(T2) + \gamma_{20}*(T3) + \gamma_{30}*(MMLP) + \gamma_{01}*(FCSCIHDV) + \gamma_{02}*(FBUSECON) + \gamma_{03}*(FARTMUS) + \gamma_{04}*(MUET) + \gamma_{11}*(FBUSECON) + *(T2) + \gamma_{12}*(FARTMUS)*(T2) + \gamma_{13}*(MUET)*(T2) + \gamma_{14}*(GENDER)*(T2) + u_{0j} + u_{1j}*(T2) + r_{ij} \quad [10]$$

This equation states that EPT scores may be viewed as a function of the overall intercept (γ_{00}), six main effects and four cross-level interaction effects, with a random error

(u_{0j}+ u_{1j} *(T2 + r_{ij}). The six main effects are the direct effects from occasion Time 2 (T2) (γ_{10}), Time 3 (T3) (γ_{20}), Multimodal and Language Proficiency(MMLP) (γ_{20}), Faculty of Cognitive Sciences and Human Development (FCSCIHDV) (γ_{01}), Faculty of Business and Commerce (FBUSECON) (γ_{02}), Faculty of Arts and Music (FARTMUS) (γ_{03}). The four cross-level interaction effects involve FBUSECON with (T2) (γ_{10}), FARTMUS with (T2) (γ_{10}), MUET with (T2) (γ_{10}), as well as GENDER with (T2) (γ_{10}).

Table 10.4

Final Model for English Language Proficiency (ELP) with Time 2 Controlled for T3 as the Time Predictor Variable

Final Estimation of Fixed Effects

Fixed Effect	Coefficient	Standard Error	t-ratio	DF	Approx p-value
For INTRCPT1, B0					
INTRCPT2, G00	40.47	0.77	52.45	311	0.000
FCSCIHDV GO1	5.80	1.16	5.04	311	0.000
FBUSECON GO2	3.42	1.51	2.62	311	0.024
FARTMUS GO3	6.16	1.61	3.84	311	0.000
MUET G04	0.23	0.75	0.30	311	0.761
For T2 Slope, B1					
INTRCPT2, G10	-3.15	1.47	-2.14	311	0.033
FBUSECON G11	4.37	1.77	2.48	311	0.014
FARTMUS G12	5.72	1.84	3.09	311	0.003
MUET G13	4.59	1.08	4.12	311	0.000
GENDER G14	4.29	1.67	2.74	311	0.007
For T3 Slope, B2					
INTRCPT2, G20	4.11	1.05	3.89	936	0.000
For MMLP Slope, B3					
INTRCPT2, G30	0.76	0.38	2.08	936	0.045

Final Estimation of Variance Components

Random Effect	Reliability	Standard Deviation	Variance Component	DF	Chi-square	p-value
INTRCPT1, U0	0.23	4.42	19.56	311	358.28	0.033
T2 U1	0.01	1.44	2.02	311	220.05	>.500
level-1, R		11.57	133.84			

Statistics for Current Covariance Components Model

Deviance	7432.22	Change in Deviance	123
Number of Parameters	4	Change in parameter	2

Table 10.4 shows that three Level-1 variables have an effect on EPT scores, namely, T2, T3 and MMLP. In addition, three Level-2 variables influence the EPT intercept that is the average EPT score at Level 2, namely Faculty (FCSCIHDV), (FBUSECON), (FARTMUS). The variable MUET is entered into the analyses at this stage even though it is not significant, because it is involved in a cross-level interaction. It is noted that two variables that influenced the EPT intercept in the analyses with Occasion as the Time predictor variable (see Table 10.3) are not significant when T2 is controlled for T3 as the Time predictor variable (see Table 10.4). These

variables are GENDER and Faculty of Social Sciences and Humanities. However, four Level-2 variables, namely FBUSECON, FARTMUS, MUET, and GENDER influence the T2 slope that is an estimated change score between Time1 1 and Time 2, through cross-level interaction effects. These relationships are shown in Figure 10.5.

The 95 per cent confidence interval for the grand mean or CI_{95} is indicated by

$$\gamma_{oo} \pm 1.96(se).$$

$$\therefore\ CI_{95} = 40.47 \pm 1.96(0.77) = 40.47 \pm 1.51 = (38.96, 41.98).$$

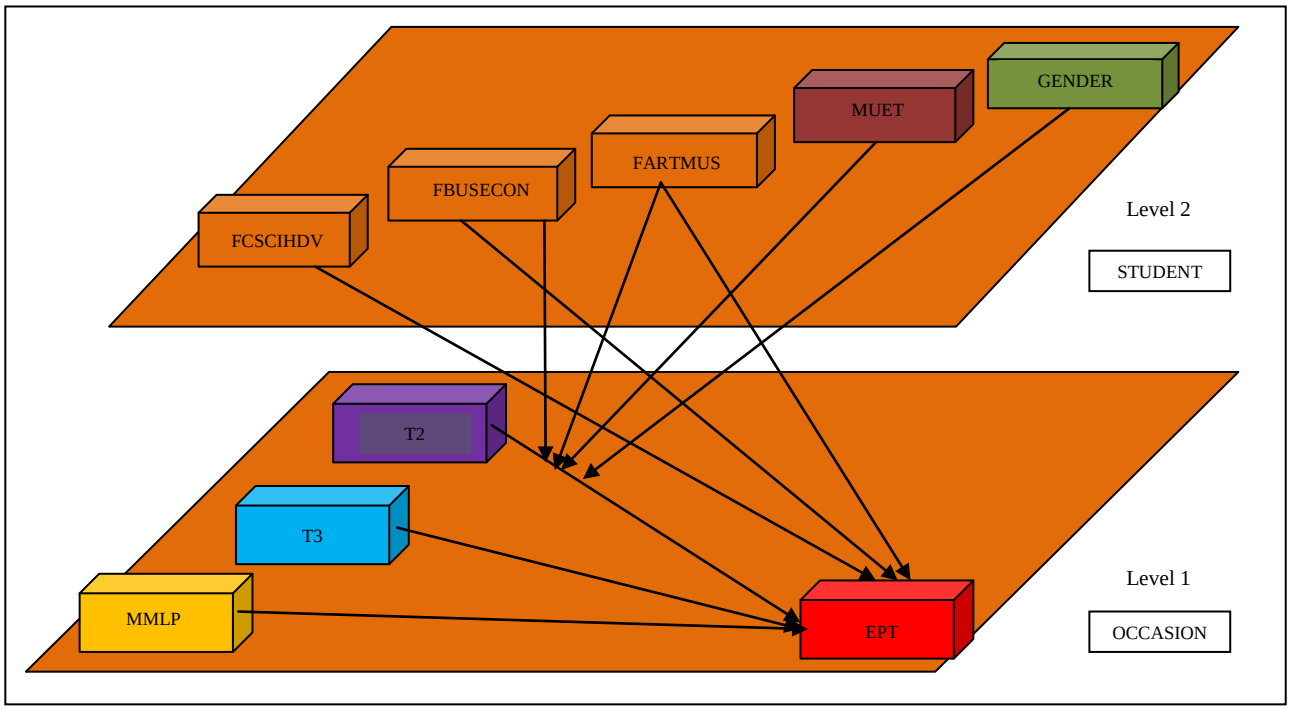

Figure 10.5. The Moderating Influence of Variables on English Language Proficiency for the Time 2 (T2) Effects

The test of $\mathbf{H}_o$ is based on Level-1 variance (chi-square statistic: 358.28; degrees of freedom: 311 and p-value: 0.033). The results indicate existence of variability within 316 students in terms of Level-1 residual variance. This is because $p < 0.05$ and hence $\mathbf{H}_o$ is rejected and it is concluded that the variance of the Level-1 residuals is significant. The null hypothesis that there are no differences in the mean EPT scores between students (i.e. $\tau_{oo} = 0$) can be rejected if ($p < 0.05$). In this context, there is some variance between students' scores available to be explained as is indicated by the chi-square value of 358.28 with a p-value of 0.033. The deviance is a measure of model fit. If compared with the null model, there is a reduction in the deviance of

123 and with the estimation of the additional two parameters. However, the heterogeneity of variance has been greatly reduced from the value calculated for the null model, and the final model for the effects at T2 controlled for T3 is an improved model. Nevertheless, for T2, the test of $\mathbf{H}_o$ (chi-square statistic: 220.05; degrees of freedom: 311 and p-value: 0.500) indicates that there is little variability between the 316 students in terms of the Level-1 residual variance since $p > 0.05$. Thus $\mathbf{H}_o$ is not rejected and further analysis of factors influencing the slope of T2 is not required.

The Effect of MUET during the T2 Period

The findings show that for the Final Model with Time 2 (T2) controlled for Time 3 (T3) as the Time predictor variable, the effects of four variables influence the T2 slope. Time 2 (T2) is the period where the students participate in the Communicative English One (CE1) course. The Malaysian University English Test (MUET) moderates the effect of T2 on English Language Proficiency. Figure 10.6 in the left hand panel shows the effects of MUET on T2 slope. At Time 2, students who enrol for the CE1 course with lower MUET bands appear not to have benefited from the instruction. They show a small decrease in their English language proficiency after having experienced a semester of instruction in the CE1 course. Similarly, the students who enrol with average MUET bands also show only a moderate increase in their English language proficiency. However, the students who enrol with higher MUET bands have improved more in their English language proficiency. The findings indicate that of the three categories of students: (a) students with lower MUET bands, (b) students with average MUET bands, and (c) students with higher MUET bands, it is the students with higher MUET bands who have benefited most during the CE1 course. The course appears not to have contributed greatly to the English Language Proficiency of the lower and average MUET band holders. Figure 10.6 shows the effects of MUET at T2 after controlling for the effects of T3.

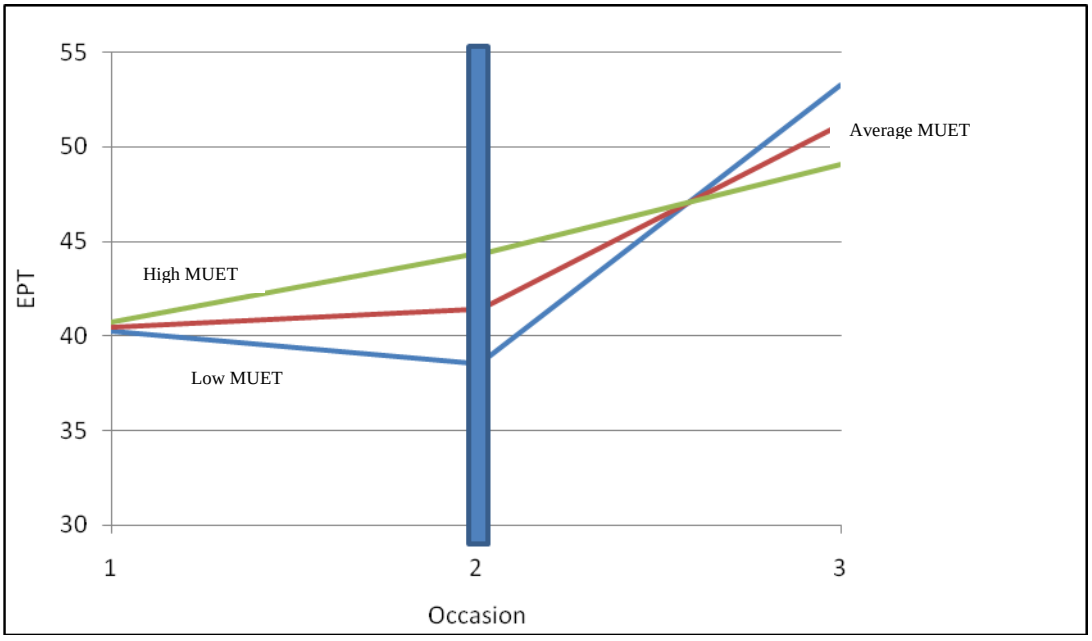

Figure 10.6. The Effect of MUET at T2 on English Language Proficiency

The different effects that arise during the T2 and T3 periods are clearly shown in the two panels of the figure. The T3 effects shown in the right hand panel are considered separately in a later section.

The Effects of Gender during the T2 Period

In addition, the effects of GENDER during the T2 period are also estimated in the analysis. These differences in effects can be seen in the left hand panel of Figure 10.7. It is found that during the T2 period when students experience a semester of the CE1 course instruction, it is the female students who show most improvement in their English language proficiency. The male students also show a slight improvement in their English language proficiency through instruction in the CE1 course for one semster. However, it can be concluded from this analysis that the female students are improving more during the CE1 course than the male students. It is evident that the female students are benefiting more from the CE1 instruction than the male students.

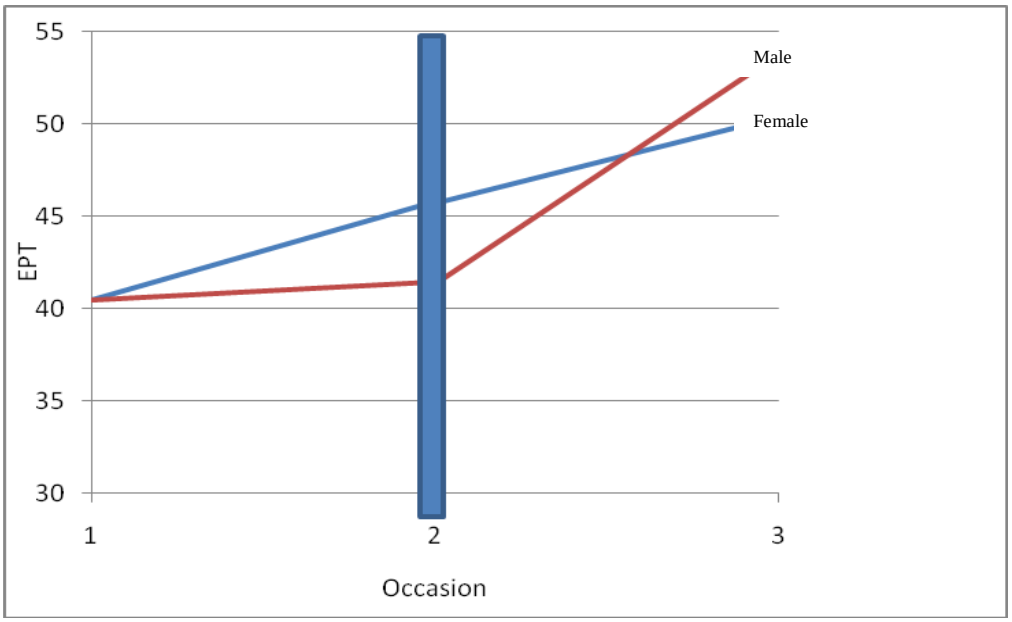

Figure 10.7. The Effect of Gender at T2 on English Language Proficiency

The Effects of Faculty during the T2 Period

The effect of FACULTY on English Language Proficiency is also estimated for the T2 period. However, since the intercept effects for the influence of the Faculties of Arts and Music and Business and Commerce are significant and different, the starting score levels at Time 1 differ, and Figure 10.8 in the left hand panel shows these differences with the effects of T2 controlled for the effects of T3. As is also shown in Figure 10.8 in the left hand panel, the Faculty of Business and Commerce (FBUSECON) and Faculty of Arts and Music (FARTMUS) are found to have benefited most from the CE1 course instruction. The students from both of these faculties show a moderate improvement in their English Language Proficiency. It is most likely that during the CE1 instruction, the students from both these faculties become aware of the importance of the English language more than the students from other faculties. It is probable too that because of this awareness, the students are employing the English language more to operate various multimodal technologies during their course. This may have contributed to the improvement in their English language proficiency. During the T2 period of this research study, the students from the Faculty of Cognitive Science and Development (FCSCIHDV) as well as other faculties improved less in their English language proficiency. It is probable that the instruction in the CE1 course does not cater adequately for the learning needs of the students from these three faculties (FCSCIHDV, FICT and FSSCIHUM).

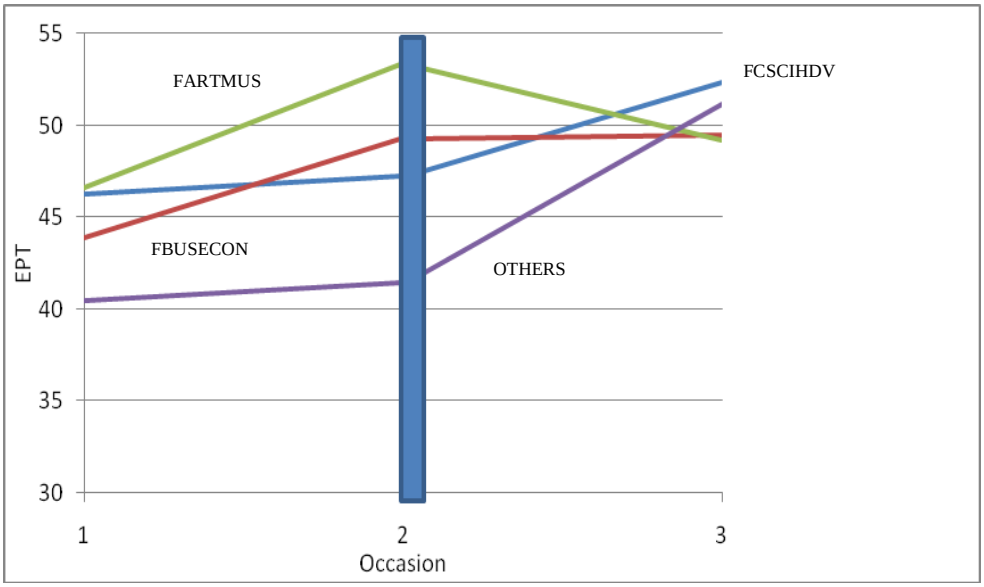

Figure 10.8. The Effect of Faculty at T2 on English Language Proficiency

Besides MUET, GENDER and FACULTY, the analysis indicates that Multimodal and Language Proficiency (MMLP) also, influences English language proficiency. During the T2 period of this research study, the students who make greater use of the English language to operate the various multimodal technologies are likely to have higher English language proficiency compared to the students who make lesser use of the English language using multimodal technologies.

10.4.2 Factors Influencing EPT Performance from Time 1 to Time 3

The next section discusses the Final Model for the effects at Time 3 (T3) and the T3 period controlled for the effects of T2. The equations for the Final model are stated as follows.

Level-1 Model

$$Y_{ij} = \beta_{0j} + \beta_{1j}*(T2) + \beta_{2j}*(T3) + \beta_{3j}*(MMLP) + r_{ij} \quad [11]$$

Level-2 Model

$$\beta_{0j} = \gamma_{00} + \gamma_{01}*(FCSCIHDV) + \gamma_{02}*(FBUSECON) + \gamma_{03}*(FARTMUS) + \gamma_{04}*(MUET) + u_{0j} \quad [12a]$$

$$\beta_{1j} = \gamma_{10} \quad [12b]$$

$$\beta_{2j} = \gamma_{20} + \gamma_{21}*(FCSCIHDV) + \gamma_{22}*(FBUSECON) + \gamma_{23}*(FARTMUS) + \gamma_{24}*(MUET) + \gamma_{25}*(GENDER) + u_{2j}$$

$\beta_{3j} = \gamma_{30}$ [12c]

By substituting the Level-2 equations (Equations 12a, 12b and 12c) into the Level-1 equation (Equation 11), the Final Model equation is recorded as follows.

$$Y_{ij} = \gamma_{00} + \gamma_{10}*(T2) + \gamma_{20}*(T3) + \gamma_{30}*(MMLP) + \gamma_{01}*(FCSCIHDV) + \gamma_{02}*(FBUSECON) + \gamma_{03}*(FARTMUS) + \gamma_{04}*(MUET) + \gamma_{21}*(FCSCIHDV) + *(T3) + \gamma_{22}*(FBUSECON)*(T3) + \gamma_{23}*(FARTMUS)*(T3) + \gamma_{24}*(MUET) *(T3) + \gamma_{25}*(GENDER)*(T3) + u_{0j} + u_{2j}*(T3) + r_{ij}. \quad [13]$$

The above equation states that EPT scores may be viewed as a function of the overall intercept (γ_{00}), seven main effects, five cross-level interaction effects, with a random error ($u_{0j} + u_{2j}*(T3 + r_{ij})$. The seven main effects are the direct effects from T2 (γ_{10}) , T3 (γ_{20}), Multimodal and Language Proficiency(MMLP) (γ_{20}), Faculty of Cognitive Sciences and Human Development (FCSCIHDV) (γ_{01}), Faculty of Business and Commerce (FBUSECON) (γ_{02}), Faculty of Arts and Music (FARTMUS) (γ_{03}) and Malaysian University English Test (MUET) (γ_{04}). The five cross-level interaction effects involve FCSCIHDV with (T3) (γ_{20}), FBUSECON with (T3) (γ_{20}), FARTMUS with (T3) (γ_{20}), MUET with (T3) (γ_{20}), as well as GENDER with (T3) (γ_{20}).

Table 10.5 shows that three Level-1 variables have an effect on EPT scores, namely, T2, T3 and MMLP. In addition, five Level-2 variables influence the T3 slope or change during the T3 period, namely (FCSCIHDV), (FBUSECON), (FARTMUS), MUET performance (MUET) and Sex of Students (GENDER).

The 95 per cent confidence interval for the grand mean or CI_{95} is indicated by

$\gamma_{oo} \pm 1.96(se)$.

$\therefore\ CI_{95} = 38.65 \pm 1.96(0.83) = 38.65 \pm 1.63 = (37.02, 40.28)$.

The test of $\mathbf{H}_o$ based on Level-1 variance (chi-square statistic: 523.57; degrees of freedom: 311 and p-value < 0.05) indicates the existence of variability between the 316 students in terms of Level-1 residual variance. This is because $p < 0.05$ and hence $\mathbf{H}_o$ is rejected and it is concluded that the variance of the Level-1 residuals is significant. Similarly, for T3, $\mathbf{H}_o$ based on Level-1 variance (chi-square statistic: 1021.85; degrees of freedom: 311 and p-value < 0.05) also

indicates the existence of variability between the 316 students in terms of the variance of the T3 slopes is significant since $p < 0.05$. Thus there is further variance of the T3 slopes available for explanation. Moreover, the null hypothesis that there are no differences in the mean EPT scores between students (i.e. $\tau_{oo} = 0$) can be rejected if $p < 0.05$. In this context, there is significant variance in the students' scores to be explained as is indicated by the chi-square value of 523.57 with a p-value < 0.05. Compared with the null model, there is a reduction in the deviance of 172 for the addition of two parameters.

Table 10.5

Final Model for English Language Proficiency (ELP) with T3 Controlled for T2 as the Time Predictor Variable

Final Estimation of Fixed Effects

Fixed Effect	Coefficient	Standard Error	t-ratio	DF	Approx p-value
For INTRCPT1, B0					
INTRCPT2, G00	38.65	0.83	45.61	311	0.000
FCSCIHDV GO1	8.12	1.50	5.42	311	0.000
FBUSECON GO2	7.90	1.90	4.17	311	0.000
FARTMUS GO3	12.50	1.72	7.25	311	0.000
MUET G04	3.65	0.93	3.92	311	0.000
For T2 Slope, B1					
INTRCPT2, G10	1.48	0.61	2.43	935	0.16
For T3 Slope, B2					
INTRCPT2, G20	11.05	2.04	5.43	935	0.000
FCSCIHDV G21	-6.97	2.55	-2.74	935	0.007
FBUSECON G22	-9.59	2.69	-3.56	935	0.001
FARTMUS G23	-14.52	2.76	-5.27	935	0.000
MUET G24	-5.76	1.44	-4.01	935	0.000
GENDER G25	-3.34	1.90	-1.76	935	0.078
For MMLP Slope, B3					
INTRCPT2, G30	0.68	0.36	1.89	935	0.058

Final Estimation of Variance Components

Random Effect	Reliability	Standard Deviation	Variance Component	DF	Chi-square	p-value
INTRCPT1, U0	0.41	5.31	28.26	311	523.37	0.000
T3	0.70	14.24	202.72	311	1021.85	0.000
level-1, R		11.13	123.99			

Statistics for Current Covariance Components Model

Deviance	7382.80	Change in deviance	172
Number of Parameters	4	Change in parameter	2

The Effects of MUET during the T3 Period

In the right hand panel of Figure 10.6, the effects of MUET performance during the T3 period are recorded. The analysis indicates that students with lower MUET bands (MUET, γ_{24}= -5.76 develop higher EPT scores during the T3 period. It is thus possible that the students with lower MUET bands may have been more motivated to improve in their English language proficiency and continued using English during the holidays. On the other hand, there is little sign that students with higher MUET bands have been lax during the vacation with regard to practising their English language even though they did not gain as much as their lower band level course mates. Consequently, all three groups gain over the six month period.

The Effects of Gender during the T3 Period

In the right hand panel of Figure 10.7, the effects of GENDER that operated during the T3 period are shown with a reversal in performance recorded in the graph. This interesting outcome from this analysis is that Gender of students (GENDER) (γ_{25}= -3.34) affects EPT scores during the T3 period. Thus during the T3 period, the male students develop higher English Language Proficiency scores compared to the female students. It is possible that the male students continue to employ the English language when operating the various multimodal technologies during the holidays compared to the female students. It is probable too that the female students do not use the multimodal technologies to the same extent during the semester break and are involved in other activities. It is also possible that the competitive and hardworking nature of female students (see Nallaya, 2002) during classroom instruction may have motivated them to obtain higher EPT scores during the semester. In addition, previous research studies on learning strategies and gender (see Nallaya, 2002) have indicated that female students work harder than male students in order to obtain approval from the instructors. However, the need for this is less when the female students are on their three month semester break and they make less gain than their male counterparts.

The Effect of Faculty during the T3 Period

Table 10.5 also records the effects of three variables associated with Faculty on the slope of T3 during the Time 3 period, namely, the Faculties of Cognitive Science and Human Development, Business and Commerce, and Arts and Music. These relationships are presented in Figure 10.8

on the right hand panel of the figure. The scores on the English Language Proficiency Test decrease slightly during this period for the students from the Faculties of Arts and Music while the students from the Faculty of Business and Commerce change little during the period. However, the scores increase for the Faculty of Cognitive Science and Human Development and the other Faculties of Social Sciences and Humanities and Information and Communication Technology.

The analysis indicates that other than the students from the Faculty of Arts and Music who may probably be employing the English language less during the semester break, the students from the other faculties seem to be using more English during their semester break. Even though, there was no CE1 instruction during the holidays the students from all the other faculties except perhaps for the Arts and Music students, appear to be motivated to use the English language more when operating the various multimodal technologies. This can be due to the awareness that they experienced during the CE1 course about the importance of the English language. It is probable that for the students from the Faculty of Arts and Music, staying with their families and community during the three months vacation has encouraged them to employ more of their first language compared to English. This is probably the reason as to why the EPT scores of the students from FARTMUS decrease after they return from their three month semester break.

10.4 Summary

HLM provides for the analysis of hierarchical or nested data in which, there are moderation or cross-level interaction effects. The use of HLM as a statistical procedure in the present research study is necessary because of the nature of the investigation. Data in this research study are collected at three time points since the purpose of the investigation involves the study of change. Hence, it is useful to examine the data at two different levels, namely, Level-1 or the Occasion level and Level-2, the Student level. It is the aim of the present research study to identify the influence of Occasion and selected student characteristics on English Proficiency Test performance. As an initial step in the analysis, factor scores are calculated using the SPSS17 software. This is carried out as HLM does not provide for the formation of latent variables.

Four models are tested in employing HLM6.0 in this study: (a) Fully unconditional model, (b) Final Model with Occasion as the key Level-1 predictor, (c) Final Model with Time 2 (T2) as the key Level-1 predictor, and (d) Final Model with Time 3 (T3) as the key Level-1

predictor. The Fully unconditional model is the first model that is run. This is done to obtain the estimates of the amounts of variance available at the two levels in the model. This analysis is similar to a one-way analysis of variance. The examination of the variance indicates the existence of variability between the 316 students in terms of the Level-1 variance. This confirms that there is significant variability between the Level-1 measures for extensive analysis.

Estimating the Null Model is an important preliminary step in the hierarchical analysis as it produces an estimate and confidence interval for the grand mean as well as information about the variability of the outcome variable at each level. The Null Model in the present research study indicates that there is considerable variance between the students' scores to be explained. The Null Model also indicates that the variability between the Level-1 residuals is significant. Since the existence of heterogeneity of variance may be due to the probability of misspecification of the Level-1 models and because the Null Model is not fully specified, further analysis is needed to investigate the effects of: (a) Occasion, (b) Time, and (c) Student characteristics on the English Proficiency Test (EPT) scores. Since the thrust of this research study is on investigating the moderating effects on change over time in English Language Proficiency performance, it is necessary to investigate the Final Occasion Model as this enables the examination of whether student characteristics influence English language learning over the three occasions.

The Final Occasion Model indicates that two Level-1 variables, namely, Occasion (OCC) and Multimodal and Language Proficiency (MMLP) as well as six Level-2 variables: FSSCIHUM, FCSCIHDV, FBUSECON, FARTMUS, MUET and GENDER influence EPT scores through cross-level interactions or moderating effects on the direct effect of Occasion on EPT scores. The Final Occasion Model indicates that at the commencement of the Communicative English One (CE1) course, the following are the high performing groups: (a) girls perform at a higher level than boys; (b) students in the higher bands of the Malaysian University English Test perform at a higher level than students at lower band levels; (c) students from different faculties perform at different levels. In addition, the Final Occasion Model also highlights the fact that students who have higher Multimodal and Language Proficiency (MMLP) also perform at higher levels on the EPT test. It is found that the characteristics of different groups have moderating effects on English Language Proficiency. However, the conditions under which these effects occur are known to differ between the period from Time 1 to Time 2 (T2) when students are engaged in the CE1 course and the period from Time 2 to Time 3 (T3) when students are having a three month semester break.

The analyses conducted with HLM give rise to the following important findings.

(1) The effect of Occasion ($\gamma = 6.82$) from Time 1 to Time 2 to Time 3 is significant and positive and indicates that the students in the CE1 course gain in English Language Proficiency both during and following the course. However, different groups of students progress at different rates (see Table 10.3).

(2) Participation in the CE1 course during the period for T1 to T2 adjusted for the effects associated with the period from T1 to T3 indicate an estimated positive influence of $\gamma_{10} = 1.48$ on student performance across all graphs on the English Proficiency Test (see Table 10.5).

(3) During the semester break following the completion of the CE1 course, an estimated gain in performance across all groups on the English Proficiency Test is $\gamma_{10} = 4.11$ (see Table 10.4). This is substantial when compared to learning taking place during the semester when the course is conducted.

(4) A positive and significant relationship is found between performance on the English Proficiency Test and Multimodal and Language Proficiency as is recorded on the questionnaire administered in this study ($\gamma = 0.68$) (see Tables 10.3, 10.4 and 10.5). The results recorded in Chapter 9 indicate that increased Multimodal and Language Proficiency is the likely cause of increase in achievement on the English Proficiency Test ($\beta = 0.13$) (see Table 9.1).

(5) The effects of the Malaysian University English Test performance on English Language Proficiency as indicated by the intercepts and slopes recorded, show that during the progress of the CE1 course, the relationship is small ($\gamma = 0.23$) but with a positive effect on slope ($\gamma = 4.59$) (see Table 10.4) indicating that the higher performing students do better. However, after the course, the intercept increases ($\gamma_{04} = 3.65$) but with a negative slope effect ($\gamma = -5.76$) (see Table 10.5) indicating that the lower performing students make greater gains than the higher performing students. This result is supported by the findings in Chapter 9 ($\beta = -0.10$) (see Table 9.1). The lower performing students on MUET are identified by the negative signs.

(6) The effects of gender on the regression slopes indicate that while the girls initially have a higher level of performance on the English Proficiency Test ($\gamma = 5.00$) (see Table 10.3) and during participation in the course ($\gamma = 4.29$) (see Table 10.4), it is the boys who gain over the six month period under survey ($\gamma = -2.89$) (see Table 10.3) and during the semester break and after the course ($\gamma = -3.34$) (see Table 10.5). The boys are identified by the negative sign.

(7) The effect of a student coming from the East Coast region of Malaysia on the slope of the variable Occasion (γ = -1.55) (see Table 10.3) indicates that the students from this region do not progress as rapidly as do the students from the Northern and Central Coast and the other States during and after the conduct of this study.

(8) The students from the five faculties differ on their performance on the English Proficiency Test with the students from the Faculty of Arts and Music (γ = 20.25) initially performing at the highest level and students from the Faculty of Information and Communication Technology (γ = 0) performing at the lowest level (see Table 10.3). Over the period of the study, the faculty groups make significant gains in performance, except those in the Faculty of Arts and Music (γ = 6.82-7.97= -1.15) (see Table 10.3), who decline in performance largely during the semester break. The students in the other faculties (Information and Communication Technology and Social Sciences and Humanities) make the greatest gains from the lowest initial level of achievement (see Tables 10.3, 10.4 and 10.5), particularly during the semester break and after.

The analyses conducted and discussed in this chapter indicate the influence of moderating effects as well as change across occasions in English Language Proficiency. These findings are of particular importance to the present research study. The use of HLM produces in terms of the moderating effects provided an extended explanation that complements the explanation arising from the examination of mediating and direct effects recorded in Chapter 9.

Chapter Eleven

Multimodal Texts and Language Learning

11.1 Structure of Study

The present research study seeks to investigate the impact of multimodal texts on the development of English Language Proficiency. The motivation to do this study is very relevant at the present time because English language learners around the world and in Malaysia, specifically, are struggling to learn English. Factors such as unclear definitions as to what a proficient English language learner is expected to be able to do, the complexity of learning the English language system and understanding the English culture, contribute to the many problems and challenges faced by English language learners. In addition, failure on the part of course designers and implementers to match course aims and objectives with students' needs as well as not acknowledging the life experiences of students outside the classroom also add to the problems of language learning.

The present research study is developed in a situation where English language learners face many challenges in the learning of the language and require all the support that they can obtain to make the learning process easier. Furthermore, the world is changing and information and communication technology play a major part in students' lives. Students today listen to the latest English songs on dvds, on their i-pods and the radio, watch English movies in cinemas, television and on their laptops and computers, and read the subtitles or captions in English. They also speak to their friends and family on Skype or voice chats, as well as write emails, sms and texts in chatrooms increasingly in English. Acknowledging this in the classroom can make the learning of English and living in a global world more meaningful. Students stop seeing the learning of English as a separate activity from living and working. In addition, making technology and multimodal texts part of the learning of the English language can help to bridge the formal and informal learning processes. Formal English language instruction in the classroom can be reinforced through informal learning processes outside the classroom by using technology and multimodal texts, since other informal learning situations for learning English are not widely available in non-English-speaking countries.

This study is guided by three general aims, namely, (a) to investigate the English language proficiency levels of students who enrol in the Communicative English One (CE1) course and the effectiveness of the course as well as the relationships between the characteristics of the students and their proficiency levels; (b) to identify the CE1 students' learning needs and their rates of learning; and (c) to consider the effectiveness of learning English language communication skills through the use of multimodal texts. These general aims are complemented with other more specific aims such as defining English language proficiency and assessing English language performance.

The design and approaches undertaken in the conduct of this study are to: (a) test the models incorporated in a theoretical framework, (b) provide answers to specific research questions, and (c) draw inferences for policy and practice. A 'triangulation mixed-method design' is employed in this present study because it includes the collection and examination of both qualitative and quantitative data simultaneously. Since, a primary goal of this study is to investigate the impact of multimodal texts on the development of English language proficiency, a research situation that facilitates the investigation of this phenomenon is chosen. Thus *Universiti Pendidikan Sultan Idris* (UPSI) which is situated in Tanjong Malim, in the State of Perak, Malaysia is the research setting for the present study. This research site is chosen specifically because it offers the Communicative English One (CE1) course, a course that guides the investigation of the phenomenon under investigation. UPSI is a university that provides teacher education programs and consists of several faculties. The students from the different faculties have to enrol in the CE1 if they do not meet the entry requirements for their study programs, namely, have obtained a grade of A1 or A2 in the English language paper in the *Sijil Pelajaran Malaysia* (SPM) examination, or a Band 4 (or higher) in the Malaysian University English Test (MUET). In addition to this, factors such as time for the collection of data, cooperation of the participants and university authorities and convenience of access to participants all play a major part in the selection of this research setting.

The present research study is guided by both social constructivist theory and a modelling approach. The nature of the present research study necessitates the investigation of the three major facets presented in the earlier paragraph, namely, (a) English language proficiency; (b) needs assessment; and (c) effectiveness of learning language communication skills through the use of multimodal texts. These three facets are argued to be causally related: (b)⟶(c)⟶(a).

These causal relationships are built into a Causal Framework (see Figure 3.2) in which student learning is incorporated through the measurement of change over three occasions. The Causal Framework requires the testing of appropriate models. The models portray the relationships that operate through social constructivist processes involving intercommunication between individuals within classes under the guidance of the teacher. The modelling approach guides the examination of data in the present research study. The investigation is conducted with the construction or formation of models and the collecting of data to test the models, estimating the parameters of the models and the sizes of effects as well as, making decisions on either to reject or accept the models and the hypotheses included in the models based on the results. With the knowledge gained from the investigation and with models confirmed and research questions answered, recommendations can be advanced for policy and practice.

Three instruments are employed in the study to collect the data for the testing of the models and hypotheses: (a) the Needs Analysis Questionnaire, (b) the Multimodal and Language Proficiency Questionnaire (MMLP), and (c) the English Proficiency Test (EPT). The Needs Analysis Questionnaire was administered only once at the start of the Communicative English One (CE1) course to identify the CE1 students' English language learning needs. The Multimodal and Language Proficiency Questionnaire and English Proficiency Test were administered on three occasions: (a) at the start of the CE1 course before students had received any instruction; (b) at the end of the CE1 course, after the students had experienced three months of formal instruction; and (c) three months after the students had completed the course and had returned from a semester break after a period of informal learning. It was necessary to administer the two instruments on three occasions as it is the aim of this research study to investigate if the CE1 students' proficiency levels increase after having experienced instruction, remain at the initial level or decrease. It is also important in this research study to examine whether students continue to use the English language even after they have completed the course and returned from visiting their families during the semester break. Hence, the EPT was administered once again when they had returned from their break after three months. Since, one key aspect of this research study is the investigation of the impact of multimodal texts on the development of English language proficiency, it is important that the Multimodal and Language Proficiency Questionnaire is administered over three occasions. Moreover, it is also important in this research study to identify the type of technology that the CE1 students use, the frequency with which the multimodal texts are used in English, the frequency of English language use for

university activities as well as the students' perceptions of English language proficiency for all of these activities and for everyday communication. Administering the questionnaire on three occasions enables the identification of whether there is an increase, decrease in the students' technology use and whether their perceptions of use remain unchanged from the point of entry to the CE1 course.

In addition to the questionnaires, a small sample of the CE1 students were also interviewed with regard to themes such as: (a) familiarity with technology, (b) technology use in learning, (c) expectations of the CE1, and (d) a general evaluation of CE1 and the overall program. In addition to the student interviews, interviews were conducted with two course planners on themes such as: (a) history of CE1, (b) guiding aims and principles in the CE1 design, (c) satisfaction with learning outcomes, (d) views about skill usage outside the classroom, (e) views about the CE1 students, (f) perceptions about usage of print-based modules for teaching, and (e) perceptions about incorporating multimodal texts for teaching and learning. Both the interviews of student and course planners help to strengthen the findings from the questionnaires and English proficiency test. The interviews also complement the data collected through quantitative methods. In addition to the interviews, students also wrote responses to three open-ended questions: (a) Are you content with the current teaching methods used by your teachers in the English classroom (CE1)? (b) Please outline your perceived needs and expectations of the course, and (c) What are your reasons for enrolling in the Communicative English One (CE1) course? The responses of the students and the course planners provide valuable information on the students' thoughts and perceptions of the CE1 course.

In this study, the Needs Analysis Questionnaire and the Multimodal and Language Proficiency Questionnaire are subjected to validation procedures employing Confirmatory Factor Analysis and Rasch scaling. The English Proficiency Test is not subjected to any traditional validation procedures because the test is designed by reputable test designers. In addition, to adhering to the principles of consequential validity, the processes employed are kept as close as possible to the actual CE1 assessment procedures. Since the instructors responsible for the CE1 course assessment use raw scores in the evaluation of students' language performance at the end of the course, these scores are not Rasch scaled. Furthermore, the test used in the CE1 assessment is also not examined using statistical procedures. In the subsequent examination of the data, the data are analysed using path analysis and hierarchical linear modelling. Path

analysis is used to form a causal network to examine both direct and mediating effects. The principle of partial least squares is employed in this analysis to explain the variance of endogenous latent variables with regard to the inner and outer model relationships. Path analysis involves the identification of relationships between the latent variables and manifest variables in the measurement models and between the latent variables in the structural model. However, latent variable path analysis only provides for the analysis of variables at a single level. Since, the present research study involves measurement on three occasions, hierarchical linear modelling (HLM) is employed for the examination of the data that is collected at two levels, namely the: (a) occasion level, and (b) student level. HLM permits the examination of the moderating effects of student characteristics on the learning of the English language between occasions.

11.2 Findings

In summarising and discussing the findings of this study, answers are provided to the ten research questions advanced in Chapter 3.

Research Question 1

How is English Language Proficiency Defined by Published Research Writings?

Discussion on definitions of proficiency emphasise a need for an unambiguous standard against which the characteristics of proficiency can be measured. It is important to acknowledge that a general definition does not necessarily apply across all environments and situations due to factors such as students' primary language proficiency, background and culture. However, for a student to be acknowledged as proficient, the student must display an underlying knowledge of the language system as well as the ability to use this knowledge as and when the situation dictates. There also appears to be some inter-dependence between oral proficiency and academic language proficiency and a weakness in either one may affect overall attainment of language proficiency. Furthermore, proficiency in students' first language can influence performance in foreign or second language. In an academic Discourse community, English language proficiency is commonly assessed with respect to listening, speaking, reading and writing skills. Ability to listen, speak, read and write is the ultimate basis of students' proficiency levels. A recognised English proficiency test is commonly the standard instrument that is used to identify a students' level of proficiency. English language learning and teaching bodies around the world adhere to descriptors that categorise learners into different bands or levels of proficiency. English language

proficiency scales are commonly used when assessing a student's level of proficiency because these scales (a) allow students to compare themselves to specified stereotypical language learning behaviours; (b) ensure that the reliability of the test is specified; and (c) provide common standards to which assessors are able to refer.

Research Question 2

What is the Underlying Structure of Factors and Traits Investigated in the Needs Analysis Questionnaire?

Xiao's (2003) 12-Factor Model reflected an acceptable fit based on fit indices such as chi-square, degrees of freedom, RMSEA, comparative fit and goodness-of-fit. However, the factor loadings for the 12-Factor Model indicated low as well as negative values. The communalities for the 12-Factor Model were also low with 25 out of the 57 items ranging from 0.20 to 0.40. Only 23 out of the 57 items were above the value of 0.40 which is the index generally used to identify whether there is a strong correlation between the factors and specific items. Five observed items were also not assigned to any of the factors. Consequently, the factors were restructured and the revised structure resulted in seven factors. The reliability indices for the revised factors ranged from 0.52 to 0.76. In addition, One-Factor, Seven-Factor, Hierarchical and Nested Models were tested to find the best and most meaningful fitting model to the sample data. The Nested Model although indicating the best fit to the sample data displayed some factor loadings that were low. Since, the Hierarchical Model had similar values of indices as the Seven-Factor Model, both these models were used in further analyses in the present research study.

In addition, the Rasch scaling of the Needs Analysis Questionnaire provided an examination of both the subjects as well as the items on the same underlying continuum and as a consequence enabled measurement on a scale that was independent of the subjects and the items employed in calibrating the scale. The use of Rasch scaling also provided automatically for missing data. The Rasch analysis also confirmed that all 55 items in the Needs Analysis Questionnaire could be employed in subsequent analyses that involved the seven scales that were identified.

Research Question 3

What are the Underlying Structure of Factors and Traits Investigated in the Multimodal and Language Proficiency Questionnaire?

Confirmatory Factor analysis was conducted to investigate the way in which observed variables related to particular factors. Six models were tested. The analysis for all but one of the models indicated high factor loadings. In order to find the best and most meaningful fitting model, alternative models were tested. The Hierarchical Model was tested to identify if the three first order factors (perceptions of proficiency on: frequency of multimodal text use, frequency of English language use for university activities, and frequency of English language use for everyday communication) loaded onto a second order factor – Multimodal and Language Proficiency or MMLP. The Nested Model was tested to investigate if the factor loadings distributed between the three factors loaded uniquely onto the Multimodal and Language Proficiency or MMLP factor. The analysis indicated that the following factor models: (a) use of technology (USETEC), (b) frequency of multimodal texts use in English (FRMENG), (c) frequency of English language use for university activities (FRENGUS), (d) perceptions of proficiency on frequency of multimodal text use (ppfmen), (e) perceptions of proficiency on the frequency of English language use for university activities (ppfenus), and (f) perceptions of proficiency on the frequency of English language use for everyday communication (ppfedcm) as well as the Hierarchical Model reflected the best fitting models to the sample data. Hence, the Multimodal and Language Proficiency could be represented by the structure of factors and traits mentioned earlier. The Rasch scaling analysis confirmed that six scales were available for use in subsequent analyses.

Research Question 4

How Does the Communicative English One Course Meet Learner Needs? How Does the Communicative English One Course Contribute to the Development of English Language Proficiency? From the Students' Perspective How Useful is the Communicative English One Course?

Many of the participants who were interviewed said that they were happy with the teaching and learning process employed in the CE1 course. However, it was emphasised that whether the students were happy in the classroom depended a lot on the instructors. Instructors who catered for students' learning needs contributed to their overall satisfaction. Although, the participants of this study indicated that they were happy with the CE1 course, they pointed out that there was

still room for improvement in the teaching methods employed. Since, many of the CE1 students were not proficient in English, they found the course difficult. Many students found that currently the activities were too traditional. Students emphasised a need for multimodal texts in the teaching and learning process as they did not find the current methods fulfilling. The students suggested that instructors could employ a variety of teaching techniques to evoke as well as sustain their interest. Furthermore, instructors could be more aware of students' learning needs and plan their lessons accordingly.

The participants of the present study listed speaking skill as the most important skill in which they needed more training. Most of the participants were rarely in an English-speaking situation and needed more practice in speaking English. The students saw the ability to speak in English as empowering them towards other activities. Participants' lack of proficiency in English was said to result in their inability to comprehend proficient speakers of English. Hence, some students concluded that they needed more training in listening. However, the participants of the present study did not emphasise the need for more training in reading and writing compared to the other two skills of speaking and listening. However, the students did specify a need for more training in grammar, error analysis and academic language. Some of their other needs were a call for simpler and more interesting techniques, use of multimodal texts in the classroom, instructors who were experts and had good personalities, and for the course to be conducted for a longer period of time to provide additional activities associated with learning the English language.

Most of the students who took part in the study found the CE1 course to be useful for their enrolled study program. They saw a relationship between CE1 and the subjects in their individual study program. They indicated that CE1 facilitated their learning as they could communicate in the English language with everyone in their particular faculties. The students also saw the CE1 course as the basis for other things such as seeking information and job opportunities. They were aware that much of the knowledge that they needed to learn was only available in the English language. Hence, the participants understood the importance of English and were endeavouring to learn to work in the English language with greater proficiency. Many of the participants perceived the CE1 course as very important for improving their English language proficiency. They emphasised that it was important for them to improve their proficiency as English was an international language and most of the available references in their other courses were in English. The students specified that the CE1 course was also useful in

providing them with wider and better employment opportunities. Mastering the English language would help to guarantee them a job in the future. In addition the CE1 course facilitated communication with other people outside the course. Enrolling for the course helped them communicate more meaningfully and effectively. This was possible as communication with others was encouraged throughout the course. Many of the participants saw the CE1 course as a catalyst in helping them to master the English language in all four areas of listening, speaking, reading and writing.

The participants of this study also saw the CE1 course as a beneficial course in helping them improve their English grammar, pronunciation, listening, reading and sharing information with others. They perceived that what they learnt in the CE1 course was useful in a wider range of situations. There were however, a few participants who only enrolled for the course because it was compulsory and they needed to obtain a pass in the course in order to enrol for Communicative English Two (CE2), the second compulsory course in which they had to enrol and complete successfully.

Research Question 5

What are the forms of multimodal technologies that students have access to? How frequently are multimodal technologies used for learning English?

The findings reveal that technology and multimodal texts play a major part in the students' lifeworlds. The participants of the research study use television, radio, computer, laptop, internet, cell phone as well as MP3 player every day. Many of these forms of technology are used for accessing information as well as communicating with others. The participants' use of technology in the present research study can be classified into two purposes: (a) accessing information about world issues or general knowledge and information with regard to learning, and (b) for entertainment or recreation. Many of the students also use technology to communicate with their friends or other students. It can be concluded that technology is employed by the participants of this present research study for information, communication and learning. A majority of the participants use technology every day while others use it sometimes. When the participants use the internet, English is the language employed as the content is expressed in the English language. The participants indicate that their lack of English language proficiency is a hindrance to their use of technology.

It is found that multimodal texts help to develop students' English language proficiency. Students who are too shy to use the English language because of their lack of proficiency benefit from multimodal texts. For example, when they watch movies, they can read subtitles; listen to the radio and practise their listening skills as well as speaking skills by imitating speech and pronunciation. The participants of the present research study indicate that they will be employing multimodal texts in the future for various activities such as for teaching, communicating and seeking information.

A majority of the participants of this research study indicate that they prefer multimodal texts to print-based texts. The students specify that multimodal texts encompass all the information they need and are very easy to understand. In addition, they point out that it is easier to obtain information from multimodal texts compared to print-based texts. Thus Multimodal texts are according to the students more interesting. There are a few students who prefer print-based texts because they are more tangible and can be kept for a longer period. Students' learning styles clearly influence their choices of learning materials. The participants of the present research study also conclude that teaching styles contribute a lot to whether students find the lessons interesting.

The findings revealed that many instructors do not use multimodal texts in the CE1 classroom, although, the students are of the view that they may use them in the future. The participants indicate that the CE1 instructors need to use multimodal texts in the teaching and learning process as they are already part of students' lifeworlds.

Research Question 6

Does the Communicative English One Course Help to Develop English Language Proficiency?

The overall effects of participation in the Communicative English One course over the period under survey that includes the semester of work in the classroom and during the semester break are positive and significant as are recorded by the analyses after other factors are taken into account that involve the much higher performance gains of certain groups of students. Figures 10.2, 10.3 and 10.4 all record the upward slope over time that indicates the increased level of performance on the English Proficiency Test across Occasions 1, 2 and 3. It is clear that in general the students have gained in English Language Proficiency as a result of the CE1.

However, subsequent analysis indicates that the gain is greater during the second time period associated with the semester break than the gain during the course over a semester. It appears that some if not all had the opportunity during the semester to lift their level of proficiency in English. The question now arises as to how they could have achieved the gain in proficiency.

Research Question 7

Can multimodal technology contribute to English language proficiency? What factors help the development of Multimodal and Language Proficiency?

The evidence recorded from the HLM analyses and the PLSPATH analyses indicate that those students who make greater use of Multimodal and Language Proficiency procedures perform better on the English Proficiency Test on the final occasion of testing as well as overall. The findings from path analysis confirm that the greater use of the procedures of Multimodal and Language Proficiency facilitate the development of English Language Proficiency. This finding is also supported by the finding from the HLM analysis. The HLM analysis shows that there is a positive as well as significant relationship with performance in English Language Proficiency through the procedures of Multimodal and Language Proficiency.

Two specific factors seem to help the development of Multimodal and Language Proficiency, namely: (a) Respondents' State of Origin (STATE), and (b) Learning Needs (NEEDS). Overall, the findings indicate that the students from the East Coast and Southern States enrolled for the CE1 with high MMLP but towards the end of this study, the Northern and Central States show a greater gain. It is probable that the CE1 provides awareness to students from all the states about the importance of the English language when using multimodal technology. The students from the Northern and Central States appear to have used multimodal technologies to a greater extent in the English language and benefitted more from their use.

The findings also indicate that the students with higher learning needs record a higher Multimodal and Language Proficiency score compared to those with lower learning needs. It is possible that the students with a higher level of need choose to employ multimodal technologies in the English language to a greater extent and this contributes to an overall development of their Multimodal and Language Proficiency as well as a greater proficiency in the use of the English language.

Research Question 8

What are the characteristics of the students that influence the proficiency in English language learning?

The findings indicate a definite relationship between student characteristics and English language learning. In particular, it is found that Gender, Faculty and State influence students' proficiency in English language learning. The results of the analyses show that the boys gain in performance during the semester break and record a higher level of proficiency on the third occasion of testing. In addition, the findings indicate that the performance of the students from the five faculties, differ during the period under review. Students from all faculties make gains, although at different rates, during the course and afterwards except for those students from the Faculty of Arts and Music. The students from Arts and Music start from an initially higher level. However, during and after the semester break these students do not gain in performance like their counterparts in other faculties. The findings also indicate that the students from the Northern and Central States gain more in their English language performance compared to the students from the other States.

Research Question 9

Does the CE1 assist the students who enter the university with lower scores on the Malaysian University English Test?

The findings indicate that the CE1 course assists students who enter the university with lower MUET band levels more compared to those with higher MUET band levels. Although, initially it is the students who enrol for the CE1 course with higher MUET band levels who benefit from the course, overall, it is the students with lower MUET band levels who show a significant gain in English language proficiency. It is possible that the CE1 course creates awareness with regard to the importance of English language proficiency for students with lower MUET band levels and they are motivated to improve in their English language proficiency. This is shown in their improved EPT scores.

Research Question 10

Can knowledge of the students' needs help in planning the CE1 course?

The findings indicate that the identified needs of the students operate through the increased use of the multimodal technology to increase the students' performance on the English Proficiency Test. Factors such as: (a) Use of Technology (USETEC), (b) Frequency of Language Use for

University Activities (FRENGUS), and (c) Multimodal and Language Proficiency (MMLP) are influenced by students' needs. It is found that students with higher learning needs use the English language less frequently for university activities. It is possible that those students with higher learning needs at the start of the course do not choose to use technology and do not choose to use the English language for university activities. At the end of the course they choose to use technology but not for university activities. After the semester break, having increased their technology use at Occasion 2, they are using multimodal technologies with English language. Taking these factors into consideration in the planning of the CE1 course might result in better learning outcomes.

Summary of Findings

The three main objectives of the investigation to examine the operation of the CE1 course are fulfilled. The findings of this research study indicate that:

(a) the CE1 course has beneficial effects;

(b) the effects of the course can be enhanced by the use of multimodal technology; and

(c) the identified needs of the students are shown to have an effect that is mediated through increased use of multimodal technology.

In addition, the findings of the study also suggest that:

(a) participation in the course compensates and provides a remedial program for those students who perform at a lower level on the Malaysian University English Test at the time of entry to the university;

(b) the male students benefit more than their female counterparts from participation during and after the course; and

(c) it would appear to be beneficial to form class groups on a faculty basis because faculty groups differ in different ways and to different extents during and after the course.

11.3 Implications

11.3.1 Implications for Theory

The findings of this research study indicate that technology can bridge formal and informal learning. Traditional classroom practices that are grounded on print-based texts are no longer the only means of learning and teaching a new language. The world has evolved into a new setting

that involves the use of new technologies. Today's world encompasses information and communication technology. Information is disseminated rapidly and effectively through various media. Technology has become a major part of a youth's lifeworld. Various forms of technology and multimodal texts are used every day to seek information, communicate as well as entertain. The four language skills of listening, speaking, reading and writing are practised more outside the classroom with the aid of various technologies that involve informal learning. For instance, (a) students can learn to listen and speak in language laboratories; (b) listen to and practise pronunciation and speech from the radio and television; (c) read captions and subtitles from television programs; and (d) practise the four language skills from computer communication such as 'Skype' and Yahoo Voice Chat'. Students experience extensive informal learning through the use of computer-based technology. Multimodal technology increases the informal use of learning English as a foreign language alongside formal instruction in a classroom. This leads to the idea that the use of technology can supplement the learning of a foreign language in a way similar to the learning that takes place within the community in the learning of a second language. This research study indicates that there are important effects arising from the use of multimodal technologies that can be employed in foreign language learning as well as for broadening second language learning. Acknowledging this feature in the English language learning environment can facilitate learning and make the learning and teaching process more interesting as well as more meaningful for the students engaged in the learning of either a foreign or a second language.

11.3.2 Implications for Future Research

Some of the participants of the present research study indicate that the teaching methods are not very interesting and that they are too traditional. These students specify that more variety in the range of texts that are multimodal in nature is likely to facilitate the learning of the English language as well as make it more interesting and meaningful as these are already a part of their lifeworlds. The present research study investigates and shows that the use of technology and multimodal texts can contribute to the development of students' language proficiency. This calls for more research into the English language learning and teaching process through the use of technology and multimodal texts. The whole CE1 course or other similar courses of English for Academic Purposes (EAP) can be taught using technology and multimodal texts that involve the English language. However, performance must be measured across several occasions in order to show meaningful change in language proficiency for the purposes of research.

In addition, the present research study does not examine the extent to which the CE1 course contributes to students' achievement in other study programs. The information collected only provides what the participants' views were regarding this. No data are available from the instructors or the students' study programs to confirm their views. It is important to investigate if English language courses such as the CE1 course does contribute to learning in the students' other study programs.

11.3.3 Implications for Policy and Practice

The findings of this study indicate that some of the serious issues that students in the CE1 raise involve (a) teaching methods that are not interesting; (b) instructors who do not cater for students' learning needs; and (c) learning materials that are not multimodal in nature. Technology enables English language learners to practise both informally and formally the four skills of listening, speaking, reading and writing. Students can practise their listening skills by listening to the radio and watching television. They can also practise their speech and pronunciation by imitating the speakers on these media. In addition, they can use many of the freely available software on the internet to practise their speaking skills. With applications such as Skype and Voice chat, students have the opportunity to practise speaking skills with more proficient speakers of English or even native speakers. Students can also improve their vocabulary and grammar with the aid of the thesaurus or spelling and grammar check applications that come with software programs. The opportunity to practise reading and writing with technology are abundant as long as a student has access to a computer and to the internet. Formal classroom instruction is often not able to provide this opportunity due to limitations such as time, class size and difficulties in providing prompt feedback. These instructors are often unable to cater for each and every students' learning needs, in the class time available. Technology enables formal classroom instruction to be reinforced with informal language learning. Students can practise their English language skills outside the classroom at their own convenience as well as in a non-threatening environment with interactive feedback. Students can direct their own learning in accordance with their specific learning needs. English language learning becomes more meaningful as learning becomes more authentic when it operates in real-life situations.

The past decade has seen quite remarkable developments in multimodal technology as well as of the greater use of ICT in higher education. This thesis is prepared at a time that is

possibly only part way through the developments that will continue to occur. Consequently, this thesis does not represent a final assessment of how Information and Communication Technology as well as multimodal technologies can influence teaching and learning in higher education. In the decades ahead it is important that research continues in this field.