Indicators affecting the development of first year students' academic literacy skills in an English-medium higher education institute in the Arabian Gulf region

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Signature: ___________________________
Dedication

This doctoral thesis is dedicated to my mother whose trust and support made it possible, and to my students without whom it would not have been possible to complete this study.
Abstract

Good academic literacy skills are vital for success in the 21st century for students in higher education and for professional people in the workforce to be able to process and convey information and knowledge. The purpose of the current study was to gain insights into the construct of academic literacy skills and to identify indicators affecting the development of the academic literacy skills of first year students in higher education. To this end, a case study was done on a cohort of 20 first year male Emirati students attending an academic literacy skills course in an engineering higher education institute in the Arabian Gulf region. The study was guided by three research questions concerning the development of academic literacy skills which were defined as writing strategies, library research strategies and general study skills (Bury, Sheese & Katz, 2013). Data gathered comprised surveys, grade comparisons, written assignments, semi-structured interviews, classroom observations recorded using a video camera and instructor observations. The framework of Academic Literacies developed by Lea and Street (1998, 2000, 2006) was used for analysis with a focus on the supplementing constructs of study skills and academic socialization. To extract more detailed knowledge and further insights about the students’ academic literacy skills, a comparison was also made between the developmental indicators regarding successful and non-successful students’ written work and their approaches to completing assignments. The indicators revealed included the students’ lack of library research strategies, digital literacy skills and sense of ownership. Theoretical and practical implications for developing students’ academic literacy skills are provided in conclusion.
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Chapter 1: Introduction to the research study

Dealing with the amount of information and knowledge available nowadays means that good academic literacy skills are necessary for students in higher education (HE) and later on in the workplace. To become successful, students in a higher education institute (HEI) need to be able to communicate what they have learned in an effective way, and while it can be argued that students’ academic literacy skills are most visible in their written work, academic literacy skills are not only about the ability to write in HE or about being assessed through written assignments. The skills required are often taught in study skills courses in HEIs in the UK, and an analysis of such courses (Wingate, 2006) showed that students were seen to need a variety of study techniques and levels of understanding to be able to write academic texts, such as “selecting/evaluating information sources, synthesizing the ideas/arguments from other sources with one’s own ideas/arguments and writing ideas/arguments up into structured, coherent text” (Wingate, 2006, p. 462). In fact, the three different types of strategies needed to develop students’ academic literacy skills were recently identified by Bury, Sheese and Katz (2013). They are writing strategies, library research strategies and the general learning strategies required for the completion of coursework which students should acquire at an early stage in HE. These three strategies also comprise the definition of academic literacy skills used in the current study.
The problem is that many first year students are not necessarily familiar with the strategies (Murtagh, 2010; Woods & Skrebels, 2011) and this issue has been recognized by HEIs. The response has been to provide the students with assistance, for instance, in the form of study skills courses (Wingate, 2006) and academic writing courses (Thaiss & Porter, 2010). There have also been attempts to teach students academic literacy skills by embedding or integrating them in content courses (Davies & Cousin, 2002; Wingate, Andon & Cogo, 2011; Chanock, Horton, Reedman & Stephenson, 2012). While embedding the learning of academic literacy skills has been suggested in literature as best practice (Wingate, 2006), because it means that the skills become part of the students’ normal workload, its success relies on “consultation with, and ownership by, the discipline teaching staff involved” (Chanock et al., 2012, p. 10). However, not all discipline instructors are comfortable teaching such skills along with discipline-specific subject matters, which is why academic literacy skills are still mainly taught as separate courses by writing instructors and English language teachers. In this research study the development of the academic literacy skills of 20 first year engineering students on an academic literacy skills course was studied in order to identify indicators affecting the development of such skills. The teaching of academic literacy skills was embedded into basic research projects which the students completed during the course, and the skills investigated comprised the students’ ability to express their ideas in writing (writing strategies), their use of academic sources and citations (library research strategies), as well as the ways in which they approached completing written assignments (general learning strategies). The participating
students were all Arab male students studying in an English-medium engineering HEI in the United Arab Emirates (UAE).

1.1 Academic writing as an expression of academic literacy skills

To eventually be able to produce written assignments in HE, students need good language skills as well as higher level thinking skills (Hassel & Giordano, 2009) and general study skills (Murtagh, 2010, Chanock et al., 2012,). Many students are not familiar with the idea that they should identify academic sources to support their arguments and to demonstrate their knowledge (August & Shanahan, 2006) when discussing matters orally or in writing in assignments in HE. It may also be difficult for students to fully comprehend the amount of time and effort needed to prepare for such assignments (Murtagh, 2010), and Pepperdine (in Irvin, 2010) aptly describes written assignments in HE as follows:

What are usually called ‘writing assignments’ in college might more accurately be called ‘literacy tasks’ because they require much more than the ability to construct correct sentences or compose neatly organized paragraphs with topic sentences. . . . Projects calling for high levels of critical literacy in college typically require knowledge of research skills, ability to read complex texts, understanding of key disciplinary concepts, and strategies for synthesizing, analyzing, and responding critically to new information, usually within a limited time frame. (Pepperdine, cited in Irvin, 2010, p. 3-4).
The description above of so called ‘literacy tasks’ shows the complexity of academic literacy skills, and in the current study the students worked on small-scale, individual research projects requiring many of the skills mentioned above. The projects involved topics familiar to them, such as the transition from school to HE, living in dormitories and reckless driving, and it was hoped that by working on the projects the students would be able to understand the research process and express themselves both orally and in writing in a more formal manner than most of them had been used to at school, and that as the projects progressed, the students would develop their thinking skills and their ability to convey more complex ideas. Working on such projects with open-ended solutions can be challenging for students who are used to school assignments which are mainly designed to inform the instructor about what students know, rather than to discuss what they have found out, as Melzer (2009) pointed out.

In an analysis of the types of written assignments done in HE over a period of four years (2002 to 2006) in the USA, Melzer (2009) found most of the written assignments in HE to be informative in nature and either directed at a specific audience like the instructor, or peers or a wider audience. There was a further categorization in writing to the instructor as an examiner or purely as an instructor. In the former view the students were expected to produce correct answers to questions, whereas in the latter case the writing was more exploratory in nature, such as the kind required, for example, in writing research papers (Melzer, 2009), and in the kinds of written assignments (literature reviews, proposals and
research reports) that the students in the current study produced while working on their research projects. Many first year students find this kind of writing challenging because they are not familiar with the ways in which topics can be analyzed, and they may be unfamiliar with the structure and format of this type of writing. It is also why I did not want to limit my study to the students’ written work and how they approached it. I wanted to investigate whether the students had followed assignment and submission guidelines, too, in order to understand their basic comprehension of academic writing and the extent of their academic socialization. It is to be noted that the conventions for academic writing vary to a certain extent from country to country, and may even be unfamiliar to native speakers studying in their mother tongue, let alone to non-native speakers (NNSs) studying in an English-medium HEI, such as the students in the current study.

1.2 Non-native speakers studying in an English-medium environment

Accommodating to the differences between school and HE (Murtagh, 2010) can be difficult for any student, but many NNSs of English studying in an English-medium environment are also faced with linguistic challenges (Sowden, 2003; Short & Fitzsimmons, 2007). NNSs are a large group of students, as in a recent UNESCO report it was estimated that there are some 3.4 million NNSs or international students in the world studying in English speaking countries and the numbers are rising (Choudaha & Chang, 2012). In 2009 over 700,000 of the international students were from China and India, and almost 60% of the Indian students studied either towards an MSc degree in engineering or
computer science (Choudaha & Chang, 2012). There has also been an increased interest specifically in the English language skills of engineering students in the rising economies of the Far East where English is being used more and more frequently as a medium of instruction in HE (Farrell & Grant, 2005; Kassim & Ali, 2010; Zhang & Mi, 2010; McDonough & Shaw, 2012; Montgomery, 2013). Students from the Arabian Gulf region study abroad, too. According to an estimate in 2009 from the Ministry of Higher Education of the United Arab Emirates (UAE), where the current study takes place, approximately 78,000 students go abroad annually to study at all levels and the number has risen by 10% between 2012 and 2013 (Croucher, 2013), the US and the UK being the most preferred destinations for students from the UAE in particular (Dhal, 2011).

1.3 English-medium instruction in higher education in the Arabian Gulf region

Regardless of the options to study abroad, most students in the Arabian Gulf region choose to study in their home countries, where HE is predominantly offered through English-medium instruction following regional language policies. This is despite the fact that the medium of instruction in all public schools and in some of the private ones is Arabic. It may be due to the fact that HE is a relatively recent phenomenon dating back to the 1970s when British and American educational companies helped to set up HE in the region. It can also perhaps be seen as a post-colonial issue or purely as a response to market needs (Findlow, 2006), since most Arabian Gulf countries are heavily involved in
the internationally significant oil and gas industries, in which the global language of communication is English.

Students wishing to study in an English-medium HEI have to meet the usual prerequisites regarding high school exit level scores as well as specific scores in internationally recognized English language tests, such as the International English Language Testing System (IELTS) or the Test of English as a Foreign Language (TOEFL). This twofold threshold also applies to international students studying in English speaking countries, and, for instance, the TOEFL score for engineering HEIs in the USA is 550 for the University of Texas and the Colorado School of Mines, and 600 for the prestigious Stanford University. In the current study done in an engineering HEI in the UAE, the required high school exit score was 80% and above, and the required TOEFL score was 500, which is somewhat lower than that required of international students in the USA (Craig, 2007).

1.3.1 English language bridging courses – a regional solution

While the low entry requirements make it possible for many students to enroll in HE in the Arabian Gulf region, some of them may find it hard to improve their English language skills at the same time as they study content-area subjects (Short & Fitzsimmons, 2007). For engineering students such subjects include mathematics, physics and chemistry.
The regional solution regarding students’ English language skills has been to allow students with the predetermined TOEFL scores to enter directly into HE and to provide pre-college foundation or bridging courses for the ones who do not meet the entry requirements. The bridging courses consist of content area lessons and English language lessons. In-coming students are initially streamed according to their abilities into courses spanning periods of eight to 16 weeks, with the expectation that they reach the predetermined entry level of the HEI within a maximum of 64 weeks, which is equivalent to four study semesters. However, studies by Cummins (1981, 2008) have shown that despite initial language skills, it can take from five to seven years for a NNS to fully function in an English-medium academic environment. Therefore, there is a continuous need to develop NNS students’ English language and academic literacy skills throughout their studies in HE.

1.4 Academic writing for engineering students

It is important that students studying engineering disciplines are given the opportunity to develop written and oral English communication skills, as more and more industries and businesses have become multinational (Grasso & Burkins, 2010; Martinez, Wells, Hannigan, Peterson & Stevenson, 2011) and communication skills have been identified among the top skills required by employers in many fields, including engineering (Archer & Davison, 2008; Morgan & O’Gorman, 2011). Moreover, as English has become the lingua franca of business and industries (Montgomery, 2009; Jenkins,
Cogo & Dewey, 2011), not only in English-speaking countries but in our increasingly globalized society, good communication skills in English are necessary not only for native speakers of English but also for people for whom English is a foreign language (Riemer, 2007; Idrus, Salleh & Abdullah, 2011).

Since the purpose of writing in HE is threefold, encompassing assessment, learning and providing the students with the means to enter into a disciplinary community (Coffin, Curry, Goodman, Hewings, Lillis & Swann, 2002; Newell-Jones, Osborne & Massey, 2005), students need to be exposed to the types of writing that are typical in the discipline that they have chosen to study. In the current study the students all studied engineering and such students are expected to eventually be able to write documents in the genres that professional engineers use (Martinez, et al., 2011). These include project proposals (Speight, 2012), questionnaires and company newsletters, and longer “feasibility, recommendation, progress and empirical research reports” (Martinez, et al., 2011, p. 221). Therefore, it seems appropriate to introduce engineering students to these types of writing and the ‘literacy tasks’ mentioned above can be incorporated into such writing. This type of writing also ties in well with project based learning (PjBL) and problem based learning (PBL) which are advocated as means of instruction in engineering HEIs (Graham & Crawley, 2010), because much of the work in the field of engineering involves working on projects. In courses using these approaches students are exposed to and produce written work within the context of projects that may last for a few weeks or span throughout a
semester, “so that students build gradually into particular forms of writing” (Coffin et al., 2002, p. 7). The purpose of the projects is typically to solve a problem or to do small-scale research. Academic literacy skills can be taught through these approaches by embedding the writing into actual projects on subject matter courses or by integrating project knowledge and the learning of writing skills into a course on academic literacy skills, as is the case in the current study.

1.4.1 The communication skills of engineering undergraduates and graduates

Engineering undergraduates and graduates have been criticized for lacking in good communication skills (Riemer, 2007; Drury, Airey & O’Carroll, 2010) regardless of whether English is their first language or not. There appear to be two main reasons why such skills have not been a focal point of learning in engineering HEIs. On the one hand, it has been assumed that students entering engineering HEIs have already acquired these skills at school (Russell, Lea, Parker, Street & Donahue, 2009) and developing the skills is therefore not necessary. On the other hand, helping engineering students to improve their non-technical or soft skills, such as communications and business skills has not been considered a priority in engineering HEIs. At a curricular level subjects such as academic literacy skills tend to be pushed into the background in discussions concerning the credit hours that students’ degrees consist of, with priority given to subjects concerning mathematics, sciences and applied sciences. At the classroom level, some engineering instructors tend to especially avoid any academic writing on their courses due to its
unpopularity among students and because it is seen to consume time from engineering subject matters (Cilliers, 2012).

Nevertheless, graduating students of engineering have to meet the requirements of their future workplaces. They need to acquire a good knowledge of their discipline in HE and they also need to have good critical thinking, problem solving and academic literacy skills (Gunn, Hearne & Sibthorpe, 2011). Research shows that the latter types of skills can be acquired successfully in courses in HE where the skills are either integrated (Davies & Cousin, 2002) or embedded into disciplinary knowledge (Wingate, Andon & Cogo, 2011; Bean & Watanabe, 2011), and some engineering HEIs have already adopted such practices. A good understanding of the indicators affecting the development of first year engineering students’ academic literacy skills can be used to enhance student learning in HE and to assist students in the kinds of written and oral communication skills eventually required in the workplace, too. Knowledge of the indicators may also be utilized in curriculum and syllabus design regardless of whether academic literacy skills are taught as curriculum infused skills, by integrating them into other courses or in dedicated courses. In addition, to discover how the indicators affected students, I investigated whether there were any differences in the ways successful and non-successful students’ academic literacy skills developed as evidenced by analyses of their written work and approaches to completing written assignments. It also helped me to gain a better understanding of the construct of academic literacy skills.
1.5 Rationale for the study

My interest in academic literacy skills and communication in the workplace has developed over my 25 years of experience as a teacher of English for Specific Purposes (ESP) and English for Academic Purposes (EAP) courses to students in technical schools and in departments of engineering in HEIs in Europe and in the Middle East. Working in engineering HEIs, English language instructors meet engineering instructors and working engineers, and they have opportunities to learn about the realities of the kinds of workplaces that students will work in after graduating. Representatives of major engineering companies may also be members of an engineering HEI’s board of directors and in that role they can have an impact on the curricula in the HEI, gearing it towards company needs, such as insisting on students being able to conduct meetings or produce written reports in English. However, while some in-coming students to engineering HEIs do not have good English language skills, others may not be very academically inclined, so I started incorporating study skills and critical thinking skills into the EAP and ESP courses I taught in Europe. I have continued to do so in the Arabian Gulf region, partly because of similar students and also because the kind of critical thinking and literacy skills incorporated in European school curricula are not necessarily parts of the school curricula in the region. It seems to me that the notion of academic literacy skills encompasses all the aforementioned skills that students need to become successful in HE, and this is why I wanted to find out more about it in theory and in practice.
Much research has been done on academic writing, a major aspect of academic literacy skills, in English as a second or foreign language (see Lea & Street, 1998; Cumming, 2001; Hyland, 2003; Lillis & Scott, 2007; Wingate & Tribble, 2012). However, although some of the research results can be utilized in engineering HEIs, not much research has been done specifically on developing the academic literacy skills of engineering students in English-medium environments until recently (see Grasso & Burkins, 2010; Drury, Airey & Carroll, 2010; Morgan & O’Gorman, 2011; Wingate, Andon & Cogo, 2011; Rajala, 2012). It could be because research studies on the communicative needs of engineers are driven by a different rationale than studies on academic literacy skills in general or specifically on academic writing. The main difference is that the communicative needs and kinds of English language skills that engineers require were originally identified in the 1970s by linguistics researchers and English language instructors in response to the needs of business and industry, as opposed to those of HE.

Linguistics researchers initially used register analysis as a basis for understanding the kinds of communicative situations that typified a specific field such as engineering, and language instructors produced materials to develop these registers (Dudley-Evans & St John, 2007). At the time, the focus was mainly on learning specific kinds of vocabulary and structures related to theories and practices of English for Specific Purposes (ESP) which dealt with the kind of language used in everyday communication within a specific field (Gatehouse, 2001; Mudraya, 2006). More recently the research has expanded to
include the kinds of communication skills and other non-technical or soft skills such as leadership skills that engineering students are expected to have at their future workplaces (McGregor, 2000; Riemer, 2002; Archer & Davison, 2008; Rajala, 2012). Similarly to other HEIs, the need to improve the oral and writing skills of engineering students has now been recognized by engineering HEIs (Kassim & Ali, 2010; Morgan & O’Gorman, 2011), and recent publications include accounts of experiments on integrative ways of incorporating the instruction of writing in departments of engineering in HEIs (Wingate, Andon & Cogo, 2011; Lievens, 2012; Armstrong, Dannatt & Evans, 2012).

1.6 Statement of the problem and aims of the study

Many native speaker and NNS students, regardless of whether they are studying engineering or other majors, are under the impression that academic writing is only about reading academic texts and summarizing, paraphrasing and synthesizing what was said in these texts (Fernsten & Reda, 2011). To clarify this misconception, instructors of academic writing need to focus on the academic and literacy development of the learner (Makin, Diaz & McLachlan, 2007), in other words, on the development of students’ academic literacy skills, including tackling the kinds of ‘literacy tasks’ mentioned earlier, as well as on approaches to completing assignments successfully. Such skills allow students entry into the disciplines studied in HE (Leki, 2007; Rainey & Moje, 2012). It is also important to note that the variety of students entering HEIs nowadays means that not all students can initially cope with the kind of writing demanded in HE (Cummins 2008; Irvin, 2010;
Wingate & Tribble, 2012), and there are marked differences between the development of different kinds of students. It seems that successful students continue improving, whereas non-successful students do not grasp what is required of them.

The aim of the current study is to identify possible indicators affecting the development of engineering students’ academic literacy skills and to find out if there are any clearly identifiable differences in the development of successful and non-successful students’ writing skills, as well as in the ways in which the two types of students approach written assignments. The indicators are the entry level indicators, such as the students’ TOEFL scores and high school exit grade, developmental indicators related to study skills and academic socialization extracted from the three written assignments that the students wrote over a period of seven weeks, and indicators revealed by the students’ approaches to completing the written assignments from classroom observations, instructor observations and semi-structured interviews, such as the amount of time students spend on homework. To this end, a case study consisting of 20 engineering students was designed. Two subgroups were identified out of the 20 students based on the final grades that they got on the academic literacy skills course at the end of 16 weeks, having completed the whole course. The cut-off points are indicative of the students’ future success on consecutive courses, as the grade spread on the academic literacy skills courses is typically between 70% and 95%. Successful students were deemed as having a course grade of 89% or above
and non-successful students a course grade 79% or less. The group of students whose grades were between 79.5 and 88.5 were called average students in the current study.

The data gathered included three consecutive assignments (a literature review, a research proposal and a final report) which each student produced for his individual research project in the first ten weeks of a 16 week academic literacy skills course, student interviews, classroom and instructor observations, surveys and grade comparisons. The remaining six weeks of the course were based on teamwork and written work produced during that time was therefore not included in the current study. It was hoped that the collection and analysis of the data would provide a deeper understanding of the construct of academic literacy skills in the context of an engineering HEI, and reveal ways of assisting students in developing their academic literacy skills in their first year in HE. My research findings should provide me with a deeper insight into academic literacy skills in general, the notions of study skills and academic socialization within the Academic Literacies (ACLITS) framework and an understanding of the indicators that affect the development of students’ academic literacy skills. Any theories or practices emerging or resulting from the findings could be used to assist faculty and administrative staff in supporting the students in their studies to a greater extent, enabling the students to make the transition from school to HE more effortlessly and to fully benefit from their undergraduate years.
The current study differs from previous studies in that it specifically deals with the development of the academic literacy skills of students who will graduate to become engineers, not first year HE students in general. Moreover, the development of the engineering students’ academic literacy skills is viewed through the lenses of study skills and academic socialization (Lea & Street, 1998, 2000, 2006) with an aim to better understand the full framework of ACLITS. In addition, while most previous studies predominantly use surveys or examples of student writing and instructor and student interviews as data, the variety of qualitative and quantitative data gathered in the current case study provides a more in-depth view of the indicators assisting or impeding the development of students’ academic literacy skills.

1.7 Contribution of this study

It is hoped that the study will reveal insights into the understanding of the construct of academic literacy skills and the ways in which engineering students apply themselves to written assignments and ultimately to acquiring academic literacy skills. In revealing the specific problems that academically weak or non-successful students face in developing their academic literacy skills as well as how successful students develop their skills, the study could provide guidelines for both instructors and students for the successful development of academic literacy skills specifically in engineering HEIs as well as in HEIs in general. Faculty and support staff could then intervene at the correct time and in the best possible way to assist students. While the data were gathered from the written work and observations of NNS students, it is hoped that there are also implications in the findings for
native speaker students. The findings may also be helpful in the development of curricula and syllabi for courses in HEIs aimed at improving the academic literacy skills of both native speaker and NNS students.

Moreover, the study may also provide a basis for adjustments in first year English language curricula or syllabi in the HEI where the students are studying. As the study was done in the UAE, the findings will be also useful to HEIs and to instructors in other countries where Gulf Arab students or other international students study engineering in English-medium HEIs. Overall, the findings will be useful to researchers and instructors involved in TESOL and teaching academic literacy skills to engineering students. There are also practical implications regarding the curricula of schools in terms of preparing students for HE, as well as to future employers of undergraduate engineers.

1.8 Structure of the thesis

In the following chapter, Chapter 2, I will provide background information about the Arabian Gulf region where the data was gathered, about education in the UAE, and factors influencing the kinds of students participating in the current study. I will then describe the specific context within which the data were gathered. Chapter 3 outlines the main theories regarding academic literacy skills, writing in HE, assistance provided for NNS engineering students and a review of previous studies on engineering students’
academic literacy skills. In Chapter 4 the research design is described. The study is a case study of the development of the academic literacy skills of 20 Arab engineering students studying engineering in an English medium HEI. The data gathered include the analyses of three written assignments from each student (a literature review, a proposal and a final report) which the first year students produced while working on individual research projects during an academic literacy skills course. Moreover, surveys, grade comparisons, classroom and instructor observations as well as student interviews were included in the data. The results are described and discussed in Chapter 5, and the conclusion in Chapter 6 provides theoretical and practical implications of the research, suggestions for areas of further study and final reflections by the researcher on the research process itself.
Chapter 2: Background

In order to have a better understanding of the circumstances in which the study took place, information is provided about the context, the Arabian Gulf region, and specifically the UAE where the data for the study was gathered. The education system in the UAE is explained, as well as the academic literacy skills course that the students participated in. There are three main points to bear in mind. First of all, HE is a fairly recent phenomenon in the UAE, so there is not a long standing culture of appreciating knowledge for one’s personal improvement or for research in general (Kapiszewski, 2001; Walters, Kadragic & Walters, 2006). Secondly, much of this form of education was imported from abroad, mainly from English speaking countries, including the curricula and the instructors (Coleman, 2006; Findlow, 2006). Thirdly, the students participating in the current study are guaranteed jobs in a major oil and gas company in the UAE on graduation, and the country is relying on its engineering HEIs to produce engineers who can contribute to the success of the country’s most important source of income, its oil and gas industry (Shihab 2001; Gonzales, 2008; Khuffash, Hatakka, & Lamont, 2013).

2.1 The multilingual and multicultural population of the UAE

The UAE has developed very rapidly from a predominantly nomadic, tribal culture (Heard-Bey, 2001) into a post-industrial one, basically in the past 40 years. The country was formed in 1971 and in 2010 the entire population was 8.3 million people including
Emiratis (20% of the population) and foreigners (80% of the population) (Diala, 2010). The rather unusual balance between the proportion of Emiratis and foreigners can be attributed to the need for a massive immigrant workforce to drive the development which is accompanying the increasing wealth acquired from the UAE’s substantial onshore and offshore oilfields and more recently from trade. The non-Emirati population consists of the predominantly foreign immigrant labor force mainly from India, Pakistan, Bangladesh, Sri Lanka and the Philippines (Diala, 2010). There are also a few hundred thousand Europeans, North Americans and Australians as well as Arabs from surrounding countries. Consequently, the UAE and in fact the whole Arabian Gulf region is both multicultural and multilingual. The most common languages spoken are Arabic, Urdu/Hindi, Malayalam and English (Syed, 2003) and they are used in many capacities and domains across the region. Though there are many Arabic speakers in the UAE, English is frequently used as a lingua franca in daily activities, business and education, and because of this, most people are expected to have a working knowledge of English. All the Emiratis and the majority of the immigrant or expatriate population adhere to Islam, which is also strongly enmeshed in the culture of the people.

2.2 General education in the UAE

Maintaining the values of culture and religion starts when people are still children and most children in the UAE attend either an all-boys or an all-girls school in the public school system. Some of the private schools, as well as a number of the private universities
are coeducational, but many of the pupils in these places are children of immigrant or expatriate workers. While there is occasional talk of the social advantages of coeducation, most parents prefer their children to adhere to their cultural and religious values and tend to send their children to be educated in a single-sex environment. This segregation continues into further education and, for example, the HEI in which the current study takes place has separate campuses for male and female students. The male and female students’ lifestyles and available opportunities to study and work differ somewhat from each other due to cultural traditions in the UAE (El Khouli, 2013). Moreover, most of the Emirati employees in all workplaces are males, though more and more females are starting to seek employment. However, in accordance with the values of Emirati culture and of Islam as it is practiced in the context of the Gulf, men and women do not mix very much, even in the workplace.

Basic education for UAE citizens traditionally centered round Quran schools, and education was implemented in the country's official language, Arabic. In these schools the oral tradition in learning was strong. Additionally, in the 1970s the idea of a structured system of primary and secondary education in Arabic was introduced (Shihab, 2001), and since then the illiteracy rate has plummeted to 7% (Rugh, 2002; Vine, 2009). It can be attributed to the increase in the number and the variety of schools available and the need for children to have a good basic education to succeed in the rapidly developing society (Rugh, 2002). Most children start education in kindergarten at the age of 4 or 5, move on
to primary school (ages 6 to 11), to intermediate school (ages 11 to 14) and then to secondary school (ages 15 to 17). The schools are either governmental (public) schools which follow a locally designed curriculum or private schools which follow some form of international curriculum. The majority of Emiratis go to public schools where the medium of instruction is mainly Arabic, though English has recently been introduced by Abu Dhabi Education Council (ADEC) as the medium of instruction in sciences. In private schools the medium of instruction is typically English for all subjects. While language instruction reforms are on-going in public schools, private school students are initially advantaged in HE due to their superior English language skills.

2.3 Higher education in the UAE

The country's tertiary education system was set up in the late 1970s after the oil boom, and in order to establish high standards in HE, qualified instructors from the West were recruited to work in the UAE’s English-medium HEIs. Initially the numbers of enrolment in HE were low, so since the 1990s Emiratis have been encouraged to study in the newly established vocational education institutes and HEIs with a variety of incentives, including salaries in the form of stipends and free education (Kapiszewski, 2001). There are currently some 60 co-educational and single sex HEIs in the UAE catering for both Emiratis and sons and daughters of immigrant workers, from here onwards designated as ‘international students’. Approximately 25% or 30,000 Emiratis studying in HE opt for government HEIs (Swan, 2013) and the remainder study in private institutions. Tuition in
government HEIs is free, whereas in private ones it is not. The HEIs mainly offer undergraduate degrees, but some also offer two year certificate courses, as well as graduate and postgraduate level education.

Among the private HEIs in the UAE there are also international branches of foreign universities, such as Herriot-Watt University from the UK and more recently New York University from the USA. It has been said that HE in the UAE can, in fact, be seen as a marketized and globalized commodity (Coleman, 2006; Wilkins, 2010). Perhaps because of this, the HE system has been criticized for focusing on providing white collar employees for the governmental or public sector, and for being "an education system focusing on training, rather than developing intellectual content or thinking skills" (Walters, Kadragic & Walters, 2006, p. 87). Nowadays more Emirati instructors are being hired at all levels, but the majority of instructors in HE are still foreigners and there is some concern about the impact of the instructors on students, especially if their cultural and religious background differs greatly from that of the students. As an example, Rupp (2009) commented on the role of American HEIs in the region as follows,

…the Middle East has its own unique region with ancient cultures and traditions. These cultures and traditions have much to offer the world and we should be cautious of the role American universities may have in potentially altering or filtering how students from the Middle East view themselves and their national identities (Rupp, 2009, p. 12).
There are several branches of American universities in the Middle East, including in the UAE, and they are among the many HEIs offering English-medium instruction. In fact, the HEI where the data for the current study was collected from was also modeled on an American engineering HEI.

2.3.1 English-medium instruction in higher education in the Arabian Gulf countries

The choice of English-medium instruction in the Arabian Gulf region may be due to language planning at a governmental level being influenced by the cost/benefit idea of maximizing national economic growth "while maintaining political stability and control" (Ricento & Hornberger, 1996, p. 406). The question has to be asked though, according to Findlow (2006), whether the fact that Arabic speaking students have to pursue higher education in English in the UAE is actually a response to market needs or "a symptom of neo-colonialist power politics" (Findlow, 2006, p. 21). This is relevant because language policies adopted in HE should not result in inequalities or marginalization among learners (Tollefson, 2002). An example of this is the fact that NNS students with weak English language skills studying in an English-medium environment may face problems learning disciplinary content in HE. Al Kitbi (2006), a professor of political science in the UAE, takes a stand on this matter as follows:

…increasing reliance on English is an example of the sort of proposed changes in educational systems that serve foreign interests more than they serve the societies of the Gulf. The insistence of foreign powers on a change in the educational
philosophy in the Arab Gulf region comes within the context of the control and suppression of university youth so that their world view in the future will be compatible with and serve the interests of those powers (Al Kitbi, 2006, p. 4).

However, English-medium instruction has to be seen in the socio-political context of the country itself, not just as an isolated matter. Behind the educational agenda are economic, political and social agendas that serve to protect the interest of particular political and social groups, and, for instance, in the Arabian Gulf region, "the more traditional universities generally teach education, arts, and some social sciences in Arabic, and sciences and technical subjects – globally oriented ones – in English, while the newer tertiary institutions teach entirely in English" (Findlow, 2006, p. 25). In the current study the data were gathered in an engineering HEI where all subjects are taught in English.

2.3.2 Emirati school leavers’ English language skills

High school graduates in the UAE are encouraged to study in HE and, according to ADEC, 95% of all Emirati females and 80% of all Emirati males who are enrolled in the final year of secondary school apply for admission to an English-medium HEI in the UAE or abroad. Nevertheless, even in 2012 only 16% of high school leavers scored enough in the high school English exit exam to enter directly into HE (Swan, 2012) without having to attend any academic bridging courses, and the results of a study on the language skills of HE students in the UAE revealed that "the challenges that EFL teachers face on a daily basis (motivation, literacy, underachievement, rote learning and learning strategies) have
their roots in the contextual framework of language education” (Syed, 2003, p. 340), in other words, the way in which languages are taught in schools. In fact, the differences between schools and HEIs both in language learning and in teaching approaches can affect the students’ initial expectations of what is required (Murtagh, 2010). Many students are used to rote learning from school (Sowa & De La Vega, 2008), whereas teaching in HE tends to be more learner-centered (Wilkins, 2010), so students need to make some adjustments in their approaches to studying. It can consequently be concluded that finding ways to improve Emirati students’ English language and academic literacy skills has to become a priority both in schools and in HEIs in the UAE.

2.3.3 Factors affecting Emirati male students in higher education

Adolescent English language learners come from a variety of cultural and educational backgrounds and their learning is affected by their socioeconomic status, native language literacy and other factors, which means that the same instructional strategies cannot be applied to all learners (Short & Fitzsimmons, 2007). Since the current study concerns Emirati male students, it is necessary to be aware of some of the factors that affect them in their HE studies. They include the students’ lack of role models, their strong sense of affiliation to their families, the good financial situation of the students’ families and the rationale for pursuing a degree in higher education or not, as the case may be.
The first university in the UAE was established in 1976, a mere 40 years ago, and some students may be the first people in their families to obtain a degree in HE, i.e. first generation students (Ridge, 2011). It is important to understand that while obtaining a degree in higher education is socially appreciated, the Arab "sense of well-being is through affiliation" (Barakat, 1993, p. 19) to families, friends and the community, so males especially are “traditionally bound by inescapable obligations of mutual assistance” (Heard-Bey, 2001, p. 99) to their family and friends. While the HEI has a role of its own in the community, family matters are often prioritized, especially by first generation students and their families, and students are often absent from classes in HE while tending to family matters (Ridge & Farah, 2012). In addition, male students may participate in running an existing family business (Abu-Hilal, 2001; Wilkins, 2010), as well as studying, which can be due to Gulf Arab families’ good financial situation, typical to the wealthy oil states in the region (Shaw, 2006; Hatherley-Greene, 2012). Many of the students do not need a degree in HE to improve their financial situation, and in a society where one’s status and title matter, there are some students who pursue studies in HE because of pressure from their parents to have the minimum qualifications for a supervisory or managerial position in a workplace in the future (Ridge & Farah, 2012). Moreover, there are other alternatives for school leavers to choose from than studying in HE. Young men in the Arabian Gulf countries can opt to get a governmental job immediately after leaving school, for instance in the police or the armed forces, in which case they can rely on being trained on the job (Wilkins, 2010; Ridge & Farah, 2012). However, more and more youths are being encouraged to continue their studies in HE and to contribute to the society on graduation.
by joining the workforce, and the quality of the students’ education will ultimately affect the quality of the country’s workforce, too.

The UAE’s recent governmental policy prioritizes the employment of Emiratis. It is known as *Emiratization*, and its aim is to increase the number of Emiratis working in all sectors (Arnold, 2013). The need to further develop the country’s human resources and the fact that oil and gas resources are finite have led to this policy. According to the policy, the focus for Emiratization is on the oil and gas industry, the banking and finance sector (Wilkins, 2010) and on education. The trend for Emiratization in the workforce is part of the UAE’s 2030 vision and the UAE government declared the year 2013 as the year of Emiratization (Arnold, 2013). An unforeseen side effect of this policy is that some students in HE seem to think that there is no need to study hard, because they are entitled to get a job under the Emiratization program. The conundrum is that there is now a stronger focus on the study habits, knowledge and skills of Emirati students graduating from HEIs, as well as on their ability to function in English in their future workplaces on behalf of both providers of education and of future employers. In order to tackle this problem, HEIs are under pressure to find ways in which to encourage students to perform to their best ability.
2.4 The higher education institute in the current study

The engineering HEI where the data for the current study were collected was established in 2001 and it was founded in order to produce Emirati engineers for a major UAE oil and gas company, which is also the main sponsor of the HEI. The students do not pay tuition fees and accommodation and course materials are free. To encourage studying, Emirati students are rewarded with stipends on achieving high Grade Point Averages (GPAs). Due to the company policies, it is not feasible to discuss the company or its role in any greater detail. The structure of education is modeled on the American system of a four year undergraduate degree including freshman, sophomore, junior, and senior year studies in various fields of engineering and the language of instruction is English. The first two years consist of general studies, including physics, mathematics and chemistry, and the final two years consist of specialized studies in various engineering disciplines. There are two 16 week semesters in an academic year. When the data for the study were collected in autumn 2009, there were 670 students in the HEI of whom 448 students were male. At the time of data collection there were 93 male students in freshman year who were randomly divided into classes of approximately 20 students each. In the first semester of their studies they all studied physics, chemistry and mathematics, as well as a compulsory academic literacy skills course called Communication 1. Although the Communication 1 course accounted for four credit hours, the classes were actually held five times a week for a whole semester (16 weeks), for a total of 80 lessons, each one lasting 50 minutes. The extra lesson was added to support the students in improving their English language skills.
2.5 Communication 1- academic literacy skills for engineering students

While traditional American HEIs offer first year students a course called Freshman Composition which mainly consists of writing academic essays on various themes, it was decided that the engineering students in the HEI in question needed to learn to write documents that were more similar to those used by engineers in the workplace. The English language instructors who had been asked to design the course conducted a needs analysis to find out what types of communicative situations oil and gas engineers needed to be able to deal with. They studied the results and developed an academic literacy skills course based on problem-based learning (PBL) and project-based learning (PjBL) which have both proved to be successful approaches in engineering education (Graham & Crawley, 2010), using the integrated approach (Davies & Cousin, 2002) comprising learning both about a subject matter and about specific skills. This was done to instill a sense of the kind of general study skills, research skills and writing strategies required of an undergraduate engineering student. The curriculum allowed for two consecutive academic literacy skills courses in the first year, Communication 1 and Communication 2, each one lasting one semester. There was no course book but students were provided with course information including assignment guidelines and grading rubrics on the course website set up in the HEI’s intranet. The role of the instructor was to act on the one hand as an imaginary project client and on the other hand as a facilitator of learning.
The first course, *Communication 1*, was designed as an introduction to research projects (full course syllabus available in Appendix A). During the 16 week course the students did two consecutive research projects (Project 1 and Project 2). One was completed individually over a period of ten weeks (Project 1) and another in teams during the final six weeks (Project 2). The current research concerns Project 1 of the *Communication 1* course (see Appendix B, Project 1). All the assignments for *Communication 1* are described in Table 1 (see Appendix B). At the beginning of Project 1 each student chose a research topic suggested by the instructor on a variety of topics, including transition problems that students face when moving from school to college. No topics related to engineering were suggested at this stage due to the students’ limited knowledge of such topics as they were at the start of their first year in HE. Having selected a topic to research, the each student found out more about his topic and prepared a literature review (Assignment 1, see Appendix C for an example). Then each student wrote a research proposal (Assignment 2, see Appendix D for an example), gathered data, analyzed the data and finally submitted a research report (Assignment 3, see Appendix E for an example). All the assignments were sent to the instructor via e-mail as Microsoft Word documents. Having completed Project 1, the students proceeded to work on Project 2 in teams of four for the remaining six weeks of the course. The minimum of a C grade (70% or higher), for the whole course, entitled the students to take *Communication 2* in the following semester. The *Communication 2* course consisted of one full scale research project done in teams of four culminating in a multimedia supported persuasive presentation. Passing both *Communication 1* and *Communication 2* was a prerequisite for
the sophomore year introductory engineering design course and for liberal arts courses such as economics, Islamic studies and the UAE history course. The *Communication* courses also provided the students with a basic framework to prepare them for their final year senior design project.

The purpose of such courses is to supply students with the kinds of learning, writing and research strategies required in HE (see Appendix A for course objectives and topics covered). Although *Communication 1* was set up in 2001-2002, there are distinct similarities with the model based on the construct of ACLITS proposed by Lea (2004). There are also more recent examples of similar courses for engineering students including Lievens’ (2012) action research based course in Belgium, and a course for undergraduate engineering students integrating writing and electrical engineering done at the University of Bath in the UK (Armstrong, Dannatt & Evans, 2012). Similar strategies were also identified in a training course designed to improve instructors’ abilities to teach academic literacy skills at the University of New Brunswick, Canada, in which academic literacy skills were defined as comprising writing strategies, library research skills and general learning strategies (Bury, Sheese and Katz, 2013). Due to the clarity of this definition of academic literacy skills, it was also the one adopted in the current study.
2.6 Chapter summary

In this chapter I have described the context within which the current study took place in the UAE, and the system of general and higher education in the country. The fact that most HEIs in the UAE are English-medium whereas the language of instruction in public (governmental) schools is Arabic poses linguistic obstacles for some students wanting to continue their studies in HE. Students may also struggle with the differences in the approaches to instruction, especially between public schools and HEIs. Additionally, it is necessary to be aware of the social factors affecting Emirati male students in HE in the UAE, which might not be so typical to students elsewhere. As the students were all studying engineering, the ways in which academic literacy skills are taught in engineering HEIs were discussed. Finally a description of the HEI where the current study took place and the course during which the data were collected were described. In the next chapter I will examine the relevant literature and previous studies related to the development of engineering students’ academic literacy skills in an English-medium environment and to the development of academic literacy skills of students specifically studying in HEIs in the UAE.
Chapter 3: Literature Review

The purpose of this literature review is to critically examine the recent literature which is relevant to the current study on the indicators affecting the development of first year undergraduate students’ academic literacy skills in an English-medium engineering HEI. First the definition of academic literacy skills is discussed, and then the relevance of academic literacy skills to HE in general, as well as to engineering students in particular. The three mainstream theories and practices developed for supporting students, namely, Writing across the Curriculum (WAC), Writing in the Disciplines (WID) and Academic Literacies (ACLITS) are described. As the current study concerns NNSs of English, ways in which such students are assisted in HE are explained, including the approaches adopted by English for Academic Purposes (EAP) practitioners as well as English for Specific Purposes (ESP) practitioners. Finally the ways in which the three mainstream theories and practices contribute to the development of students’ academic literacy skills are described, as well as previous studies on academic literacy skills, in order to justify the need for the current study.

3.1 Defining what is meant by academic literacy skills

Trying to understand how students develop academic literacy skills has been of interest to instructors of academic writing and researchers in the field regarding both native speakers (Hall & Navarro, 2011) as well as non-native speakers of English (Wingate & Tribble, 2012) for the past thirty years. However, it is not an easy matter to investigate,
because there are many definitions of academic literacy skills and many individual differences among students. Moreover, developing these skills “entails cumulative, hierarchical processes” (August & Shanahan, 2006, p. 5) that are lifelong, which makes it even more difficult to investigate this construct.

Academic literacy skills have been defined referentially as the types of reading and writing required in HE (Lillis & Scott, 2007), as well as a means for students to obtain "membership in communities of academic readers and writers" (Leki, 2007, p. 1). How students gain this membership means that they need to go beyond reproducing received knowledge to gathering new information and data, developing critical judgment, engaging in discussions and decision making, and applying knowledge to new situations and problems (Bazerman, Bonini & Figueiredo, 2009, p. ix)

This means that academic literacy skills are closely linked to information literacy skills. In fact, Secker & Coonan (2011) who have been involved in developing a new curriculum for information literacy at the University of Cambridge in the UK view academic literacy skills, or academic literacies, as overlapping with information literacy, and they advocate that the skills should not be seen as transferable skills but as a means for developing students’ “intellectual infrastructure” (Secker & Coonan, 2011, p. 4) within HE. Due to the variety of skills involved, such skills should “be taught by a range of different people
within an institution including librarians, learning developers, IT and e-learning staff, but most importantly by academic staff” (Secker & Coonan, 2011, p. 7).

Figure 1 below shows the relationship of academic literacy skills to information literacy skills at a theoretical level and how the two notions relate to what Secker & Coonan and Secker (2011) call ‘the information literacy landscape’. The model in Figure 1 was also applied to academic literacy skills training for faculty at the University of New Brunswick in Canada, and findings from research conducted on the training sessions by Bury, Sheese and Katz (2013) led to the identification of three practical strategies that were necessary for students to improve their academic literacy skills; writing strategies, library research strategies and general learning strategies (Bury, Sheese & Katz, 2013). The three strategies encompass features of academic literacies, information literacy and digital literacy, as shown in Figure 1. In the current study students’ academic literacy skills are defined as comprising the three strategies identified by Bury, Sheese and Katz (2013).
Academic literacy skills in context


It is important not to confuse academic literacy skills or academic literacies in the sense that they are used in Figure 1 with the overarching framework of *Academic Literacies* developed by Lea and Street (1998, 2000, 2006) for the purpose of understanding and analyzing academic literacy skills within the social contexts of students, instructors, institutions and society in general. Aspects of the framework of *Academic Literacies* are utilized in the current study and they are discussed more explicitly in section 3.3.4.
3.2 The need for academic literacy skills in higher education

Students need academic literacy skills to learn their disciplinary subjects and to demonstrate what they have learned (Lea, 2004). Much of the kind of communication in HE is based on reading about a topic and summarizing, paraphrasing and synthesizing ideas from what has been read, as well as linking the acquired knowledge to one’s own ideas in a coherent manner (Wingate, 2006). This type of communication is more formal in style than students are used to and the written assignments are much longer than ones required of students at school. Tackling the written assignments in HE can, therefore, be very challenging for some students. Additionally, the discourse communities of both HE and the students’ potential future workplace are not familiar to students (Wingate & Tribble, 2012), because students are more used to writing about daily and social activities at school as opposed to the more analytic kind of communication required in HE (Guthrie, 2011; Woods & Skrebels, 2011). As a result, the students seem to “develop a sense of loss regarding their writing” (Woods & Skrebels, 2011, p. 42) in their first year in HE due to a lack of understanding of the requirements and the effort needed to complete written assignments in HE. All this may initially result in the production of poor quality written assignments (Murtagh, 2010) in all subjects, in other words, in poor demonstrations of learning, and it is why the acquisition of academic literacy skills is important in HE. Moreover, the quantity and quality of students’ knowledge in HE are typically tested by graded assignments, quizzes, tests, exams, portfolios, presentations and final year projects (Lillis & Scott, 2007; College Success Factor Index (CSFI), 2010). Some of the means of testing students’ knowledge can be oral, but most of them require good writing skills
(Clughen & Connell, 2012), which incoming students to HE may be lacking in (Rees & Wilkinson, 2008; Skinner & Mort, 2009, Wingate & Tribble, 2012), as mentioned earlier.

3.2.1 Academic literacy skills and professional communication for engineering students

Students in the various disciplines in HE need to be exposed to academic literacy skills early on their studies in order to learn different subjects and to develop their thinking skills and communication skills, as “each discipline has its own discourse community, a shared way of using language and constructing knowledge” (Rainey & Moje, 2012, pp. 73-74). The students need to gradually become a part of that community by first becoming academically socialized (Lea & Street, 2006), in other words, they need to learn to function effectively as a part of the academic community they wish to pertain to. This means that “from an academic socialization perspective, the task of the tutor / advisor is to inculcate students into a new ‘culture’, that of the academy” (Russell, et al., 2009, p. 348) by providing them with opportunities to learn the kind of academic literacy skills that enable them to do so. Such skills include understanding how to approach written assignments in HE, finding relevant sources and citing them correctly, and knowing where to find assistance regarding the kinds of complex assignments produced in HE when necessary. The academic socialization perspective mentioned above refers to the aspect of the Academic Literacies framework developed by Lea and Street (1998) whereby students need to become familiar with academic discourse and become able to use it.
In addition, engineering students need to develop the necessary technical and commercial awareness in order to be successful in their future jobs (Morgan & O’Gorman, 2011). Nowadays companies hiring engineers constitute highly competitive environments (Duderstadt, 2010), because “the engineering profession is becoming increasingly global as it moves from domestic operations to global outsourcing (subcontracts), [and] global offshoring (overseas divisions)” (Sun, 2010, p. 76). Due to this, engineers are likely to be involved with people of different nationalities in their jobs and they may work on engineering projects managing or participating in teams which include members of different ethnicities and cultures (Grasso & Burkins, 2010; Rajala, 2012). Moreover, they need to be able to communicate with both technical and non-technical audiences (Speight, 2012) orally and in writing. The kinds of reports that engineers are expected to produce in the workplace usually require them to “instruct, analyze information, propose work to be done, report progress on work and report and interpret the results of research” (Pearsall, 2010, p. 123). This kind of technical communication has to be “accurate, clear and concise” (Martinez, et al., 2011, p. 3) and free of errors, because poor communication skills may reflect badly both on the person and on the profession that he or she represents (Riemer, 2007). It therefore follows that the ability to communicate effectively has become essential for professional engineers, regardless of whether they are native speakers or non-native speakers of English (Nguyen, 1998; McGregor, 2000; Idrus, Salleh & Abdullah, 2011; Rajala, 2012).
Research studies, including student surveys and faculty interviews done in the UK (Rees & Wilkinson, 2008) and in Australia describing the implementation of online and integrated courses to supplement the students’ shortcomings in academic literacy skills (Skinner & Mort, 2009; Drury, Airey & O’Carroll, 2010), show that “many undergraduate engineering students are poor readers, writers and presenters” (Skinner & Mort, 2009, p. 1037). It seems that young people still initially choose to study science or engineering with the assumption that these disciplines do not require much writing (Mort & Drury, 2012). There are also many students who “find writing difficult and consider it a low priority, an attitude often reinforced within engineering curricula” (Drury, Airey & O’Carroll, 2010, p. 236). The assumption in most degree programs is that in-coming students already have the necessary communication skills (Skinner & Mort, 2009). An additional problem that engineering students face at the end of their studies in HE is that there is a fundamental contradiction between the social motive of schooling (epistemic) and the social motive of work (pragmatic), which makes it very difficult to learn to write in the ways disciplinary and professional people do within HE (Russell, 2013, p. 174).

It also follows that reading and writing as a student is not the same as reading and writing as an engineer, though engineering HEIs try to combine the two to inculcate students into both academic and workplace environments. The students need to understand that different types of communication are context dependent and, therefore, if they wish to excel in their studies, as well as eventually as professional engineers, they must develop good oral and
written communication skills (Mort & Drury, 2012) first in HE, and learn to adapt them to a workplace environment.

While it is necessary to understand the significance of academic literacy skills to engineering students, it is also important to be aware of the existing theories and practices supporting the development of students’ academic literacy skills. The main theories and practices are *Writing across the Curriculum* (WAC) and *Writing in the Disciplines* (WID) which are dominant in North America, and the more recent theory of *Academic Literacies* (ACLITS) with its origins in the UK. Moreover, approaches developed to support students studying in English as a foreign language (EFL) in HE, namely EAP and ESP, will be discussed, as well as prior studies on engineering students’ academic literacy skills, as well as studies on academic literacy skills in general done in the UAE where the current study takes place.

### 3.3 Writing across the Curriculum, Writing in the Disciplines and Academic Literacies

To specifically support the development of academic literacy skills, academic writing researchers and instructors in HEIs have come to understand the usefulness of “discipline and genre specific applications…to foster discipline specific learning and thought development” (Bazerman, Bonini & Figueiredo, 2009, p. 281) and there are currently three main approaches to developing such learning in HE. They all originated as
a result of the diverse population that started entering HEIs in the latter part of the 20\textsuperscript{th} century. In North America this led to the development of first \textit{Writing across the Curriculum} then \textit{Writing in the Disciplines} in the 1970s, and in the UK a similar trend in in-coming students in the mid-1980s gave rise to the \textit{Academic Literacies} movement. An understanding of all three approaches (\textit{Writing across the Curriculum}, \textit{Writing in the Disciplines} and \textit{Academic Literacies}) is necessary, because there is nowadays an overlap in these approaches to developing native speaker students’ and NNS students’ academic literacy skills in HE (Clughen & Connell, 2012), both in English speaking countries and abroad. To clarify the relationship of the three approaches to each other, I will now discuss them in chronological order.

### 3.3.1 Writing across the Curriculum

In North America there is a tradition of freshman composition courses in HE which spans over 100 years, originally set up to improve the writing skills of native English speaking first year students. The focus has been on rhetoric and composition, and the courses have been “located in English departments primarily, with relatively little contact with linguistics,” (Russell, et al., 2009, p. 396). Students on these courses have predominantly focused on suitable writing skills for the humanities disciplines and such courses are still typical in American HEIs in North America and abroad. However, the diverse population that started entering universities in the 1970s led to a need for a wider range of academic literacy skills, and the freshman composition courses were criticized for
being limited (Thaiss & Porter, 2010), because they were not seen to cater for disciplines such as engineering, nor did they take into account other factors, such as different types of plagiarism or ways of citing sources (Bergmann, 1996). It was understood that there was a need for “a theory of writing growth that linked literacy education with disciplinary studies” (Thaiss & Porter, 2010, p. 535), a movement away from teaching the students to write in their own voice towards an introductory course on academic writing (McLeod, 2002), catering for all disciplines, not just the Humanities. This led to the development of *Writing across the Curriculum* (WAC).

The principal idea of WAC was to ask students to write assignments that could be used as a tool for learning (Russell, 2013) and to assist them in their academic writing skills, so that they could display their knowledge in a way that was useful in all disciplines in HE (Thaiss & Porter, 2010). In addition to academic writing, WAC pedagogy is seen to include reading, critical thinking and research (Hall & Navarro, 2011). The idea of writing being a tool for learning is important because it “begins with and relies on the fundamental work in communication at all levels of a student’s education” (Craig, 2011, p. 2), although the main focus has traditionally been on first year students.

Despite the potentially holistic idea of WAC, instructors of WAC courses have been criticized for focusing more on grammatical issues than on the kinds of rhetoric that
the students need to familiarize themselves with, regardless of the increased popularity of theories concerning writing as a socially situated practice (McLeod & Maimon, 2000). It seems that there has also been too much focus on writing as a skill, instead of writing as a form of intellectual activity (Russell, 2013), a means for students to gain the kind of intellectual agility mentioned earlier (Secker & Coonan, 2011). Similarly, McLeod and Maimon (2000) argued that assisting students to write in the disciplines should not be “an exercise in formalism and technical correctness; to the contrary, it is an exercise in epistemology” (McLeod & Maimon, 2000, p. 580). However, the multitude of books on how to write in HE that came out in the 1990s as a results of WAC theories and practices, books which have been used in HE ever since then, show that focus on form in writing is still heavily supported by writing instructors (Ochsner & Fowler, 2004).

3.3.2 Writing in the Disciplines

Whereas WAC focuses on writing that can be used in a variety of disciplines, Writing in the Disciplines (WID) tends to focus on the differences between different discourse communities, (McLeod, 2002). This is why WAC is used more in the first two years of undergraduate studies, whereas WID is common in the third and fourth years. The concept of WID was introduced in the 1980s and emphasized the “students’ immersion in disciplinary community” Ochsner & Fowler, 2004, p. 118), whereby the students are seen as novices who need to develop the necessary skills to become experts and hence members of the desired community into which they will graduate. The notion of academic or
disciplinary epistemology is possibly better incorporated in the idea of WID, which “implies that writing is occurring in some form as assignments in subjects or courses in one or more disciplines” (Thaiss & Porter, 2010, p. 538), and that learning to write occurs through disciplinary knowledge (McLeod, 2002; Russell, 2013). WID also refers to research done on the genres and typical kind of rhetoric used within different disciplines, which is where its roots originate (Carter, 2007), measuring the effects of writing on learning, for example, by comparing two groups of students where one group is given template style guidance and the other group is given online support explaining both how and why one must write in a specific way (Carter, Ferzli & Wiebe, 2007). The two terms, WAC and WID, are often used interchangeably or referred to as WAC/WID (Hall & Navarro, 2011). Nevertheless, they differ in that “while WAC emphasizes the commonality, portability, and communicability of writing practices, WID emphasizes disciplinary differences, diversity, and heterogeneity” (Monroe, 2003, p. 4). The students in the current study are in their first year in an engineering HEI, and while the principles of WAC can be applied to the development of their academic literacy skills, the principles of WID cannot, due to the students’ limited disciplinary knowledge at this stage of their education as Freshman students.

3.3.3 The contribution of WAC/WID to writing in HE

Both WAC and WID encompass the notion that students who transition to HE have to actually learn a kind of new language, to understand new vocabulary grammar and
styles of writing as well as the kind of thinking involved (Hall & Navarro, 2011). The holistic nature of the theories and practices, as well as the expansion of the American style of higher education and campuses abroad have resulted in an increase in the popularity of WAC and WID outside North America, too. However, both approaches have been criticized for not taking into account how well students need to learn to write, nor actually producing evidence confirming the relationship between the notions of writing to learn and learning to write, (Ochsner & Fowler, 2004). It is to be noted that, despite criticism, according to a recent survey the use of WAC/WID approaches has almost doubled in HEIs in the US and Canada over the past 20 years (Thaiss & Porter, 2010). Both approaches are prevalent in HEIs today in Europe, too, and WAC and WID have also had considerable influence on the development of the approach prevalent in the UK, the Academic Literacies approach discussed below. As for the current study, while the notions of WAC apply to first year students, my interest lies not only in students’ written work, but in the ways in which students are able to acquire the necessary academic literacy skills. This has not been a major concern of the practitioners and researchers of WAC, and it was, therefore, necessary for me to research further theories on academic writing.

3.3.4 Academic Literacies

While much of the research on academic literacy skills in general and research related specifically to WAC and WID focuses on the “identification and support of cognitive processes and strategies” (Hull & Moje, 2012, p. 1), another type of theory, the
The theory of *Academic Literacies* (ACLITS), was developed in the UK slightly later on (Lea & Street, 1998). It stems from a similar situation as the development of WAC/WID, a change in the kinds of students entering HE. This theory was developed as a result of the move “from an elite to a mass higher education system where there is a greater cultural, linguistic and social diversity” (Lillis, 2003, p. 192), and it started in the UK in the 1990s. In contrast to the two approaches discussed above, research in the field of ACLITS is based more on understanding the effects which “contexts, learning environments, social interactions, cultural practices and cultural tools” (Hull & Moje, 2012, p. 1) have on reading and writing and it is, as such, an informative way of assisting the acculturation of a diverse student body into HE. This is because ACLITS is based on New Literacy Studies, whereby literacy is understood as a social practice, stemming from the socio-cultural studies it developed from, and it is seen as a means of empowering the people (Gee, 1991; Street, 1997, 2003). In the current study on first year students in an English-medium environment, the notions of social and context-dependent practices inherent to ACLITS and of students becoming empowered in HE through understanding the kinds of communication skills required in HE seemed appropriate to me as a means of studying the development of students’ academic literacy skills. This is why I decided to investigate the theories and practices of ACLITS in more detail.

The major movement of ACLITS started with an investigation by Lea and Street in 1998 into student learning in HE, in which they studied the different ways in which
students and academic staff perceived undergraduate students’ written assignments (Lea & Street, 1998). The ethnographic approach they used included data such as semi-structured interviews, lesson observations, samples of teaching materials and of students' writing. Based on the results, the researchers (Lea & Street, 1998) identified three main perspectives for studying the learning process: the study skills approach, academic socialization and the overarching concept of Academic Literacies.

3.3.4.1 The study skills approach

The term study skills is used in a very specific sense in the context of ACLITS, and is not to be confused with the idea of general learning strategies (Bury, Sheese & Katz, 2013), a component of academic literacy skills in the current study. The study skills approach in the ACLITS framework means looking at learning academic literacy skills as “a set of atomised skills which students have to learn and which are then transferable to other contexts” (Street, 2009, p. 348). The idea is that students in HE lack some of the necessary skills to be able to study well and the purpose of teaching the skills is to help them improve. With regard to academic literacy skills, and specifically writing, an awareness of the typical errors occurring in students’ written work, as well as errors produced by students in a particular discipline or by ones sharing an L1 other than English makes it easier for writing instructors and tutors to assist students in improving their communication skills, especially their written work. This is why the study skills approach is beneficial for the analyses of student writing, and why it is used in this sense in the
current study to analyze the number and types of errors in students’ written assignments. However, pedagogically adopting this approach mainly means focusing on grammar and spelling issues (Hyland, 2003) and looking at writing as “technical and instrumental” (Street, 2009, p. 348). It is also the kind of approach that WAC has been criticized for (Ochsner & Fowler, 2004). On its own, the study skills approach is a bolt-on solution to learning to write, and while it serves as a “deficit model of providing support for weak students” (Wingate, 2006, p. 458), it does not support effective learning (Wingate, 2006), if it is the only approach used, as it “fails to address the deep language, literacy and discourse issues” (Lea & Street, 2000, p. 35). In the UK, this is evident in the type of assistance that study skills centers in HEIs offer to students. In engineering HEIs, such as the one where the current study was done, the services of existing Writing Centers can be utilized to provide help for students with their study skills as they are defined in the ACLITS approach, while actual academic literacy skills can be taught using the integrated or embedded approaches for teaching discussed earlier, thus assisting students in developing their overall academic socialization. The study skills perspective is used in the current study to provide evidence of the developmental trends of grammar, spelling and punctuation issues in student writing.

3.3.4.2 Academic socialization

The concept of academic socialization within the ACLITS framework encompasses the notion of study skills, and research pertaining to it includes studies on students’
initiatives to engage in their studies in order to become successful in HE (Lea & Street, 2006; Lillis & Scott, 2007; Wingate, Andon & Cogo, 2011; Armstrong, Dannatt & Evans, 2012). *Academic socialization* is concerned with the extent to which students take ownership of their studies when they feel that they have become a part of the HE system within the HEI they are studying in. The students’ success depends on the instruction and support provided by the HEI in which they choose to study, their ability to study in HE, as well as the effort that the students themselves are prepared to invest towards learning and academic achievement (Lea & Street, 1998). From a narrower perspective, the notion of *academic socialization* can be seen to encompass the students’ need to acclimatize to the discourse and types of writing in academia (Newell-Jones, Osborne & Massey, 2005).

These are all matters which are at the core of the current study, where students face three main issues regarding *academic socialization*. Firstly, the students have to make the transition from teacher-centered instruction at school to a more learner-centered approach in HE. Secondly, most of the students must adapt to moving from an L1 learning environment to an English-medium one. Finally, the students need to learn and develop the kind of academic literacy skills that will assist them in their studies in HE and later on in the workplace. However, the problem is that while it is possible to observe students’ *academic socialization*, as a whole, the ACLITS framework does not offer solutions within the scope of *academic socialization* for ways to conceptualize these observations (Street, 2003; Lillis & Scott, 2007) or to benefit from them in practice in HE. It seems that there is
need to develop the model further, and to link it with existing theories and practices of matters such as student engagement and motivation (Chapman, 2003; Gardner, 2007; Barkley, 2009; Guilloteaux & Dörnyei, 2008). Furthermore, the notion of *academic socialization* “does not necessarily recognize those features of pedagogic identity that relate to the broader social context of disciplinary knowledge” (Hallett, 2010). Examples of this in the context of engineering HE could be linking mathematical problems to thermodynamics, or drawing from general knowledge such as the understanding of project management or of compartmentalizing parts of a process in order to eventually produce a fully functioning system with efficient parts. It is also important that research findings on *academic socialization* be linked to practical knowledge regarding the cultural and contextual environment which the students are studying in and coming from (Kumaravadivelu, 2006) for the findings to be fully utilized in practice.

### 3.3.4.3 The framework of Academic Literacies

As discussed above, the notion of *study skills* retains the perspective of deficits in students’ academic literacy skills, including surface language, grammar and spelling, and *academic socialization* in turn is about acculturizing students into academic discourse (Lea & Street, 1998). The third model of student writing is *Academic Literacies* (ACLITS), which, according to Street (2009),

views student writing and learning as issues at the level of epistemology and identities rather than skill or socialization. An *Academic Literacies* approach views
the institutions in which academic practices take place as constituted in, and as sites 
of, discourse and power. It sees the literacy demands of the curriculum as involving 
a variety of communicative practices, including genres, fields, and disciplines 
(Street, 2009, p. 349).

In other words, the perspective of ACLITS is that of “students’ negotiation of conflicting 
literacy practices” (Lea & Street, 1998, p. 172). While ACLITS can be seen as 
comprising the notions of study skills and academic socialization, the latter two models 
can be utilized to make useful contributions to an ACLITS approach, which is why they 
are used as a means of analyses in the current study. The ACLITS framework recognizes 
multiple literacies which “vary according to time and space” (Street, 2003, p. 77), and in 
order to fully implement the ACLITS model in HE, there is a need for HEIs to change their 
perception of written academic English (Wingate & Tribble, 2012; Turner, 2012). This 
applies both to HEIs in English-speaking countries with NS and NNS students as well as to 
English-medium HEIs in other countries.

The framework has provided a useful tool for researchers to increase their 
understanding of academic literacy skills through the lenses of study skills and academic 
socialization, as well through ACLITS (see Picard, 2006, for a study on ACLITS at an 
institutional level in a Gulf University). However, until recently, there have been very few 
 attempts to link the perspectives of ACLITS to institutional or pedagogical practices 
(Lillis, 2003; Street, 2009; Wingate & Tribble, 2012; Turner 2012). The solution seems to
be to interlink existing, practice-based approaches such as EAP, to the theoretical frameworks of academic literacy skills theories provided by WAC (Hall & Navarro, 2011), WAC/WID (Russell, et al., 2009) and ACLITS (Wingate & Tribble, 2012). In this way, the valuable findings of studies based on the aforementioned theoretical frameworks could be utilized more advantageously in practice. Moreover, despite offering a contemporary socio-cultural model for understanding various literacies, the limitations of the perspective of ACLITS have been recognized even by the people who have been strongly instrumental in creating the approach, such as Lea, Street and Russell. Lea pointed out that there is a “need to attend more broadly to the workings of academic literacy practices, rather than confine attention to students who – by virtue of their entry to university via a non-traditional route – are seen as marginalised by a dominant academic culture” (Lea, 2004, p. 742). In addition, the lack of practical concepts to explain and put research findings into practice is seen to be an issue both empirically and methodologically in ACLITS (Russell, et al., 2009). A further issue has been how to make use of the ACLITS framework in assisting NNS students both in theory and in practice, as studies done within the ACLITS framework originally focused on native speakers of English. Since NNS students struggle with the English language and the acquisition of academic literacy skills, they are likely to feel marginalized (Howell, 2008). There is, therefore, a need to make the socially situated discourse practices within ACLITS explicit, so that L1 and L2 or NNS instructors and students can experiment with these discourses (Lillis, 2003). However, to date the main focus of researchers and practitioners of L2 students in particular has been purely on improving the students’ English language skills mainly through ESP and EAP courses,
although this is now not felt to be sufficient, because many students are also lacking in academic literacy skills. The teaching context in the HEI where the data for the current study were collected does not follow the ACLITS approach to developing academic literacy skills, which is why the data in the current are analyzed using the perspectives of study skills and academic socialization.

3.4 Assisting non-native speaker students with English language and academic literacy skills

NNS students in English speaking countries and in English-medium HEIs elsewhere need to ensure that they acquire the necessary English language skills, as well as the academic literacy skills that will enable them to study in HE (Sowden, 2003). A shortcoming of programs based on WAC/WID and ACLITS is that, because these frameworks were initially developed for L1 students, they do not take into account the many variables that affect L2 students. A combination of poor L2 skills and weak academic abilities can hinder learning in an English-medium HEI and cause NNS students to “experience higher levels of frustration with critical reading and academic writing than their academically better counterparts” (Hassel & Giordano, 2009, p. 27). However, to date, in order to enter into an English-medium HEI, L2 students must first meet the initial entry requirements of the HEI they wish to study in, which include specified high school exit grades to ensure the students’ readiness to study in HE and a preset score in an internationally recognized English language proficiency test, such as TOEFL or IELTS. Some HEIs offer pre-HE courses to assist students in bringing their English language skills
to the desired levels in the form of courses in EAP. There has also recently been an increased awareness of the necessity to integrate academic literacy skills into EAP courses (Wingate & Tribble, 2012), as well as into ESP courses dealing with disciplinary-specific language or the kind of language typical to a particular profession (Hyland & Hamp-Lyons, 2002). As the current study concerns students in HE studying towards a bachelor’s degree and eventually a job in engineering, it is necessary to understand how academic literacy skills are taught in engineering HEIs and to review the theories and practices pertaining to ESP as well as those of EAP.

3.4.1 Approaches to teaching academic literacy skills to engineering students

Three main approaches to teaching academic literacy skills to engineering students were identified in a study by Davies and Cousin (2002). They are the embedded approach, the integrated approach and separate courses for developing individual skills. While the study was done in the UK, there are several similarities in these approaches and ones used elsewhere in engineering HEIs in my experience. The approaches are explained starting with the most integrated approaches of relating academic literacy skills to engineering subjects.

The embedded approach implies that writing skills can be included implicitly in the general content of scientific and engineering subjects. It is in line with an ACLITS perspective in adopting the focus of literacies as “social practices at the levels of
epistemology and identities” (Lea & Street, 1998, p. 172). The writing skills are included in the outcomes of the engineering course and the skills are taught by an engineering subject matter instructor, who ideally could be seen as capable of instilling the students with a sense of the kinds of writing that are typical to the discourse of the discipline of engineering. In practice the implementation of this approach to teaching writing skills can vary greatly depending on the interest of the subject matter instructor to integrate writing skills into his or her courses, and there are instructors who are “hesitant to incorporate academic writing into their courses due to the anticipated student anxiety and increase in time” (Cilliers, 2012, p. 1029). This means that the extent to which academic literacy skills are taught in conjunction with the actual engineering subjects cannot be clearly determined when adopting the embedded approach, even if the skills are included at the curricular level and in course outcomes. However, although the embedded approach has not been used widely in the UK in HE in general, a recent case study by Wingate, Andon and Cogo (2011) analyzed the design and implementation of an academic writing intervention for first year students in an applied linguistics program including in-class and online support using this approach. Due to successful results, they advocated its usefulness in HE. It is to be noted that according to Davies’ and Cousin’s (2002) definitions, the approach in the aforementioned study is closer to the integrated approach explained below, whereby the engineering subject matter instructors work together with the writing instructors to improve the students’ writing skills.
In the *integrated approach* the aim to improve students’ writing skills can be explicitly stated, as it is “integrated in the technical and academic content” (Davies & Cousin, 2002, p. 2). It seems appropriate to adopt such an approach in the different disciplines, because “writing skills need to address both, the purpose and context of the writing task as well as the structure and language of the text” (Mort & Drury, 2012, p. 1). The *integrated approach* is similar to that of the *academic socialization* perspective within the framework of ACLITS, whereby students are assisted in developing an awareness of the kinds of genres typical to the engineering discipline. Moreover, written assignments on subject matter problems seem to provide “the most intensive and demanding tool for eliciting sustained critical thought” (Bean, 2011, p. xvi). The approach is also in line with the idea of using writing as a means for students to become academically socialized, as indicated in the theoretical frameworks of ACLITS (Lea & Street, 1998; 2000; 2006), WAC and WID. The students in the current study attended an academic literacy skills course which follows the integrated approach, which is why *academic socialization* as it is understood within the ACLITS framework is one of the lenses through which the students’ written work in the current study is analyzed. It is an approach which involves the strong cooperation of both engineering and writing instructors. The writing instructors may participate in the actual engineering subjects as co-instructors or be available for the students at the HEI’s writing center at designated times to assist in matters specifically concerning the engineering subject or course in question. In the current study the engineering instructors were involved in the course design, but the course is taught by writing instructors.
The third approach is to teach the skills explicitly in separate courses or modules (Davies & Cousin, 2002; Drury, Airey & O’Carroll, 2010; Wingate & Tribble, 2012), which is what typically happens in many HEIs in the UK in centralized study skills units, and in the form of courses on English for Academic Purposes (EAP). While the idea of generic writing courses in HE may be appealing, the problem is that students do not often understand the relevance of courses where they are taught generic skills (Wingate, 2006), which may result in poor attendance and poor quality work. Moreover, it is likely that the students who actually attend such courses on writing are the high-achieving students who want to improve themselves instead of the weak students who need the skills (Wingate, 2006), regardless of whether the courses are required ones or additional courses to support the students. The notion of such courses is that there is a deficit in the students’ abilities, which can be dealt with by providing the students with a generic skills course. The courses are reminiscent of the heavily criticized ACLITS construct of study skills, whereby the focus of academic writing is predominantly on grammar, vocabulary and punctuation (Lea & Street, 1998), but not on other skills which promote the development of academic literacy skills. In addition to study skills, NNS engineering students are often taught discipline specific vocabulary and phrases as advocated in ESP. It seems, however, from a practicing instructor’s point of view that the embedded and integrated approaches are more suitable for teaching academic writing and for assisting students in acquiring the necessary academic literacy skills to succeed in their studies, although the selection of the approach depends on the extent to which an engineering HEI recognizes and prioritizes the
need to improve the students’ academic literacy skills, in other words the engineering HEI’s epistemology of ACLITS.

3.4.2 Engineering students and the need for English for Specific Purposes

Historically the need for workplace communication in English evolved from industrial needs after the Second World War and the growth of the United States of America as an economic power. Investments from the American government led to “significant changes and advances in engineering and the way in which engineers were educated” (Rajala, 2012, p. 1376) and to the spread of the English language as a means of communication outside the USA. This meant that the demand for improving the communication skills of people at workplaces did not come from the English teaching community but from business and industry (Gatehouse, 2001; Benesch, 2001), and what distinguishes ESP from other forms of English language teaching is that it is more needs driven than theory driven (Belcher, Johns & Paltridge, 2011). It also had an impact on research in linguistics, introducing a new focus on the way that language was used in real communication, and on the discourse structures and linguistic features both in academia (see Swales, 1990) and in professional fields, including features of corporate documents, letters of application and popularized medical texts (Paltridge, 2012). Researchers of ESP focused on genre and both the formal properties and communicative purposes of texts (see Swales, 1990; Bhatia, 1993; Hutchison & Waters, 2004), as well as on pedagogical applications (Belcher, Johns & Paltridge, 2011).
The rise in interest in ESP also coincided with a strong trend in ethnographic research methods, such as anthropology and systemic functional linguistics (Matthiessen & Halliday, 1997; Lillis, 2008), which has led to a more learner-centered and holistic approach to teaching ESP. Prior to that the teaching of ESP was criticized for aiming too much at fixed patterns and formulas as a means of expressing oneself within a specific genre (Paltridge, 2012). Typical ESP courses comprised tailoring language for specific communicative purposes, such as focusing on the kind of English that a receptionist in a doctor’s office would need to regularly use and understand. Many language courses were developed in the 1970s based on this idea to cater for students in both HE and vocational education, as well as in workplaces. Other areas of teaching and research that developed as a result of interest in ESP were English for Science and Technology (EST) in the late 1960s and early 1970s, as well as specialized courses in areas such as engineering (Mudraya, 2006). More recently “ESP researchers have begun to consider student identity as central to needs analysis” (Belcher, Johns & Paltridge, 2011). From a theoretical perspective Belcher, Johns & Paltridge (2011) advocate similar trends in ESP to those in WAC/WID and ACLITS in that

ESP researchers must use all of the tools at hand to systematically assess the needs, identities, and issues faced by learners and the language and discourses of their contexts—as well as the “frames” brought to the context by the researchers themselves. In addition, we must continue to develop the convergence between
research, teaching, and learning, as our profession advances. (Belcher, Johns & Paltridge, 2011, p. 3-4)

While ESP serves the purpose of exposing the learner to the typical discourse structures and patterns of a specific academic or professional field or type of writing, it has its limitations. From a practical point of view, ESP instructors are often faced with the challenge of dealing with the expectations of the professional community that the students want to become members of and “reducing that information into teachable units taught over a specified and often limited period of time” (Benesch, 2001, p. ix). However, curricula have evolved into encompassing a wider range of English language skills than merely the basic vocabulary required. The three abilities identified as necessary are the ability to use the jargon of a specific field, academic literacy skills and the ability to be able to deal with everyday written and oral communication (Gatehouse, 2001). In the current study the focus is on developing students’ academic literacy skills and understanding of formats of workplace communication, not on using the jargon of a specific field of engineering.

3.4.3 English for Academic Purposes

With more international or NNS students entering into HEIs with English-medium instruction, a prominent branch of ESP emerged, that of English for Academic purposes
It has been advocated that EAP should deal with common core academic discourse, similar to the notion of WAC, with features typical to the kind of formal writing in HE, such as high lexical density, high nominal style and impersonal constructions (Hyland, 2006). Analyzing texts with these features is seen to assist students in becoming more academically socialized, than focusing on the deficit study skills model alone which has been adopted in many EAP courses (Wingate, 2006). This has been the case, for example, in universities in the UK where students lacking in academic literacy skills are specifically taught writing, reading, speaking and listening skills separately. The principles of EAP have been criticized for lacking in research and theory, being very text-centered and pragmatically oriented, similarly to ESP. There has been little of the kind of research
necessary to understand the various types of disciplinary writing and ways of thinking promoted by ACLITS in the field of EAP (Wingate & Tribble, 2012). However, it has now been understood that students need more than just English language skills to succeed in HE. As mentioned with regard to the notion of academic socialization, the context in which NNS students study is not only important in the various disciplines in HE but equally important to the community to which they aspire to belong to once they graduate. That is why there is a need to integrate the existing theories and practices regarding students’ English language skills and their academic literacy skills.

3.5 Working with EAP, ESP, WAC/WID and ACLITS to improve academic literacy skills

Students in HE need assistance in improving their academic literacy skills in order to be successful in their studies. Engineering HEIs also need to ensure that graduating students meet the demands of business and industry in terms of disciplinary knowledge and communication skills. Fluency in English, good oral skills, more so than written skills, as well as skills in “teleconferencing, networking for contacts and advice, and presenting new ideas and alternative strategies” (Kassim & Ali, 2010, p. 1) are important according to a recent survey of multinational companies, and the pedagogical recommendation is to incorporate workplace scenarios in teaching (Kassim & Ali, 2010). At the surface level this could be seen as a recommendation to revert back to traditional ESP teaching, but the current emphasis is on the integration of disciplinary skills, critical thinking, knowledge and academic literacy skills.
It has been suggested that there should be more cooperation between WAC/WID and theories and practices regarding the teaching of English to NNS students, such as WAC instructors using EAP models for assistance regarding multilingual students (Hall, 2009). Similarly, Wingate and Tribble (2012) advocate that practical pedagogical guidelines provided by EAP researchers and practitioners should be used in conjunction with the ACLITS model. NNS students’ identities and knowledge of the challenges they face in understanding various discourses are also of concern to ESP practitioners, to which end the ACLITS framework could provide some solutions. Recently this has led to increased numbers of experiments in the integrated approach to teaching in the form of cooperation between writing instructors and disciplinary faculty, resulting in examples of possible course syllabuses integrating engineering disciplinary thinking and knowledge with academic literacy skills, as shown in Table 2 below. Examples of research conducted over the past seven years have been included to show the increased crossover among academic literacy skills theories and disciplinary specific knowledge, as well as the trend towards integrated instruction methods.
## Table 2

### Integrating academic literacy skills and engineering disciplinary knowledge

<table>
<thead>
<tr>
<th>Integrated skills for L1/L2 students (Country where study was done)</th>
<th>Method of integration by engineering and writing instructors (Research method)</th>
<th>Academic literacy skills theory / disciplinary knowledge</th>
<th>Author (year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic literacy skills; research skills, increased discipline specific vocabulary (L2) (UK)</td>
<td>Lexical approach where the focus is on the use of vocabulary determined by a linguistic corpus, a vast database collection of written or spoken text which can be analyzed in a variety of ways (Analysis of 2-million word corpus of engineering textbooks, targeting non-technical words with a specific meaning in a technical context)</td>
<td>ESP/engineering disciplinary knowledge</td>
<td>Mudraya (2006)</td>
</tr>
<tr>
<td>Academic literacy skills (English as an additional language) (South Africa)</td>
<td>Multimodal Approach in which students’ visual (posters) and written (reports) work is analyzed to assist them in understanding academic literacy skills (Social semiotic multimodal analysis of students’ texts)</td>
<td>ACLITS/sustainability in engineering</td>
<td>Archer (2006)</td>
</tr>
<tr>
<td>Understanding of a metagenre including problem solving, empirical inquiry, research from sources and performance (L1) (USA)</td>
<td>Create occasions for students to learn the skills appropriate to their fields by applying those skills in situations similar to those students would encounter in their professions (Descriptive discussion)</td>
<td>WID/disciplines as ways of knowing, doing and writing</td>
<td>Carter, M. (2007)</td>
</tr>
<tr>
<td>Report writing (L1) (Australia)</td>
<td>An online design making explicit both the product and process of report writing through structured and scaffolded learning tasks embedded within the context of the discipline unit of study (Description of a case study)</td>
<td>Genre based pedagogy/civil engineering</td>
<td>Drury, Airey &amp; O’Carroll, (2010)</td>
</tr>
<tr>
<td>Soft skills, such as communication (L1) (Northern Ireland)</td>
<td>Curriculum embedded approach through business-like modules with industrial relevance</td>
<td>Soft skills/engineering disciplinary knowledge</td>
<td>Morgan &amp; O’Gorman, (2011)</td>
</tr>
<tr>
<td>Academic writing and presentation skills (L1/L2) (UK)</td>
<td>Address deficiencies identified by subject tutors, principally weaknesses in the structure, layout and style of laboratory and technical reports, and to improve referencing skills, grammatical</td>
<td>EAP/electrical engineering</td>
<td>Armstrong, Dannatt &amp; Evans (2012)</td>
</tr>
<tr>
<td>Disciplinary writing (L1) (UK)</td>
<td>Embedded approach (Reflection using psycho-socio elements of resistance to embedding writing in the discipline of engineering)</td>
<td>WAC and WID/social theory</td>
<td>Clughen &amp; Connell (2012)</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Research skills and academic writing (L1) (Belgium)</td>
<td>Action research, whereby the researchers set out from a practical position with the intention of causing change by researching an issue (Description of a course in the form of an action research project involving engineering students who surveyed professional engineers to find out the relevance of research skills and academic writing to engineers)</td>
<td>Academic literacy skills/disciplinary knowledge</td>
<td>Lievens (2012)</td>
</tr>
</tbody>
</table>

As is evident from the instructional approaches used (in the second column in Table 2 above), integrating the findings of the theory-based WAC/WID and ACLITS models with the more practical aspects of WAC, the pedagogies of ESP and EAP and with disciplinary knowledge could serve to assist both L1 and L2 students in HE in developing their academic literacy skills.

### 3.6 Prior studies on academic literacy skills for engineering students in the UAE

As HE is a relatively new phenomenon in the UAE, there are not many studies on the academic literacy skills of engineering students specifically. However, a recent study based on surveys and semi-structured interviews conducted in UAE engineering companies about the communication competencies required revealed that graduate
students’ oral and written skills need to be improved to meet industry demands (El-Sakran & Awad, 2012). This is in line with studies done elsewhere, such as the one done by Drury, Airey and O’Carroll (2010), who piloted an online module for improving engineering students’ academic literacy skills to accommodate the diverse student population in HEIs in Australia. The need for the course was due to the discrepancy between engineering students’ communication skills and requirements of government and professional bodies (Drury, Airey and O’Carroll, 2010).

There is prior research in the UAE on the acquisition of academic literacy skills in general, on pre-HE academic bridging courses and in HE. All the studies included the notion of becoming academically socialized through improved English language and writing skills, as shown in Table 3 below.
Table 3

Research into the academic literacy skills of Arabic students

<table>
<thead>
<tr>
<th>Author (year)</th>
<th>Type of publication (Level of study and location)</th>
<th>Topic</th>
<th>Method</th>
<th>Conclusions</th>
</tr>
</thead>
</table>
| Picard (2006), doctoral dissertation (bridging course students, UAE) | ACLIT in a Gulf university | -Comparison of Gulf university’s academic vocabulary list to British National Corpus  
-Analysis of the effects of use of corpus information on students’ academic socialization  
-Analysis of how vocabulary relates to competence through a review of student writing portfolios and student interviews | -HEIs should aim towards a pedagogy of multiliteracies  
-HEIs should provide students with feelings of inclusiveness and respect |
| Bielenberg & Gillway (2006), paper (first year students, UAE) | Academic writing, speaking and problem solving of real life experiences | -Course description  
-Student surveys and facilitator interviews | -The adopted approach improved academic language, engagement and lifelong learning skills in general |
| Howell (2008), doctoral dissertation (bridging course students, New Zealand) | How students perceive themselves in entering the academic community of practice with regard to their writing skills | -An ethnographic case study of the development of the writing skills of seven students, using essays, discussions, interviews, focus groups, questionnaires and observations | -There is a need to facilitate students in achieving a strong identity in the communities of practice that they aspire to belong to |
| Rogier (2012), Doctoral dissertation (fourth year undergraduates, UAE) | Student and teacher perceptions of the effects of English-medium instruction on language proficiency | -A retrospective panel study using a test/retest method to investigate score gains on the IELTS exam after four years of undergraduate study  
-Surveys  
-Interviews | -Student and teacher perceptions differ  
-English-medium HEIs need clear instructional goals for language development and support systems for teachers and learners throughout the educational experience |

While the studies in Table 3 above focused on academic literacy skills in general and specifically on student writing, none of them discussed how students approach written
assignments, in other words, the students’ readiness to become academically socialized, although several of them recognize the increased need for the *academic socialization* of students. In the context of the current study, an understanding of the issues regarding Arabian Gulf students’ *academic socialization* derives from research studies on their attitudes to studies, which include the impact of their good financial situation (Al-Saeed, Shaw & Wakelam, 2000; Minnis, 2006; Shaw, 2006) as well as Arabian Gulf students’ false preconceptions of their abilities to study through instructor and support staff observations (Gauntlett, 2005). More recently, Ridge and Farah (2012) and Hatherley-Greene (2012) identified parents, wealth and school experiences as the three main problems that Emirati male students face in adapting to their studies in HE. Although the family background of the students is not within the scope of the current study, the three factors mentioned above could also affect some students’ attitudes towards their studies. Regardless, the socio-cultural context in which the students study is significant, because it is the reality through which they form their perceptions of their own identity in and outside the HEI that they have chosen to study in. It is ultimately impacted by the requirements set by the society which they belong to and the expectations of the HEIs in which they are students, as well as, in this case, the engineering company in which they will eventually work.
3.7 The gaps in the literature

Prior studies concerning students’ academic literacy skills spanning over 20 years show that there is a long tradition of research on the kinds of academic literacy skills required to succeed in HE in general. More recently there have been studies on the specific communication skills that industries and business require of graduating engineering students in order for the students to be able to become global engineers. The majority of the conclusions in these studies indicate that students do not meet the expectations of their future employers, and that there is a need for engineering HEIs to incorporate both academic literacy skills and professional communication skills into the curricula. The implication seems to be that students need to learn the necessary oral and written skills and become socialized both academically and professionally during the course of their studies in HE.

In the current study, the students are exposed to both academic literacy skills and professional communication skills in the Communication 1 course (see Appendix A for course syllabus). The integrated approach is applied as the instruction method in that the course is taught by qualified academic literacy skills instructors, but the nature of the written assignments is more reminiscent of the kinds of documents used in engineering, such as proposals (Speight, 2012) and research reports (Martinez, et al., 2011). There is also an emphasis on the style of writing typical of professional engineering documents which need to be written in an accurate, clear and concise manner (Martinez, et al., 2011).
However, despite this seemingly ideal context for acquiring academic literacy skills and professional communication skills according to the research discussed above, many students still have problems in expressing themselves in writing and in developing their skills. To identify the indicators affecting the development of the students’ academic literacy skills, the ACLITS notions of study skills and academic socialization were utilized for the current study. It was hoped that any features arising from the analyses would provide a means for developing engineering students’ academic literacy skills and narrowing the gap between ACLITS theory and its practical applications. The research questions generated for the current study are described below.

3.8 The research questions

The research questions for the current study were developed as a result of eight years of observing Gulf Arab students on a first year academic literacy skills course for undergraduates in an English medium HEI. It seemed that the students who started the course successfully continued to do so, students with average English language skills developed their academic literacy skills to some extent, but the academic literacy skills of non-successful students did not seem to develop very much at all. I wanted to find out whether some reasons for these differences could be revealed through insights into the development of their academic literacy skills. The rationale for focusing on any differences in the written work and approaches to written assignments of successful and non-
successful students is explained in Chapter 1, Section 1.6. The three research questions that I generated are

1. What are the indicators of the development of academic literacy skills, if any, which can be extracted from the written work of the 20 engineering students who constitute the main case study?

2. What are the differences, if any, in the development of the written work of successful students and non-successful students over a ten-week period?

3. What are the differences, if any, in the ways that successful and non-successful students apply themselves to completing written assignments?

The purpose of question 1 was to investigate student writing through the ACLITS lenses of **study skills** and **academic socialization** to see whether there were any clear indicators in the students’ written work that were linked to developmental trends in their academic literacy skills. Secondly I wanted to find out whether the indicators in the written work of successful and non-successful students differed. Finally I wanted to see if there were any differences in the approaches to completing assignments among the two groups of students. This meant observing the students’ participation in lesson, how they reacted when the assignments were explained to them, how much time they spent on homework in general, and whether they handed in their assignments before or after the assignment submission deadlines provided in the course syllabus.
3.9 Chapter summary

In this chapter I have discussed the significance of academic literacy skills for students in HE in general and engineering students in particular. The principles and shortcomings of the major existing theories regarding student writing, including WAC, WID and ACLITS were reviewed as well as ways the theories and practices can be used to assist NNS students in developing their English language and academic literacy skills. Moreover the theories and practices of ESP and EAP were described and that was followed by discussion on how all the above-mentioned theories can be utilized to assist NSs and NNSs in HE. Trends in *embedded* and *integrated* instruction emerged from previous studies both in engineering and non-engineering HEIs, as well as a general concern for the lack in both academic literacy and professional communication skills among first year and graduating students abroad and in the UAE where the current study takes place. Finally I described the gaps in the current literature to justify why I have undertaken this study. In the following chapter I will explain the research design of the current study.
Chapter 4: The Research Design

In this chapter the ontological, epistemological and methodological approaches to the research will be explained, as well as the data collection procedures used. First the research paradigm and the research methodology are described. Then the rationale for the research, the research questions and the research design and methods selected to find answers to the research questions are discussed. This is followed by a description of the participants. Subsequently the data collection procedures are explained. After that there is a discussion of the ethical considerations involved in this research, and of how the findings were analyzed and collated. Finally the dependability, credibility and limitations of the current research are discussed.

4.1. The research paradigm

It is important for any researcher to define the approach he or she chooses to implement, the type of inquiry that he or she wishes to pursue, and the theoretical underpinnings of such an approach. The aim of the current study was to identify possible indicators of the development of engineering students’ academic literacy skills and to find out if there are any clearly identifiable differences in the development of successful and non-successful students. My research questions fit within the postpositivist paradigm in that they focus on multiple measures and observations in order to understand a phenomenon; however, the emphasis on the reality constructed by the students and the instructor regarding academic literacy skills fits better into the interpretive paradigm. My
research as conducted is based on a pragmatic paradigm, enabling me to make my research questions the starting point of the current study, because in the pragmatist research paradigm it is the research question which determines the framework of the research (Bogdan & Biklen, 1998; Creswell, 2008; Wahyuni, 2012), and this was the reality in the current study. Moreover, pragmatism advocates mixed methods, and it is the approach I wanted to take to the data collection in order to be able to gain insights into the construct of academic literacy skills. This also deemed the pragmatic research paradigm as the most appropriate one within which to situate the research methodology.

4.1.1 The ontology, epistemology and methodology of the pragmatist paradigm

Ontology concerns the question of what our idea of reality is and thereby what can be known about it. Contrary to postpositivism or interpretivism, in research employing the pragmatic paradigm it is not necessary to make sharp distinctions between objective and subjective views of the data gathered, as supporters of pragmatism maintain “that objectivist and subjectivist perspectives are not mutually exclusive” (Wahyuni, 2012, p. 71).

The origins of pragmatism can be traced back to Charles Sanders Peirce, William James, and John Dewey, the classical pragmatists (Johnson & Onwuegbuzie, 2004). These people were all
interested in examining practical consequences and empirical findings to help in understanding the import of philosophical positions and, importantly, to help in deciding which action to take next as one attempts to better understand real-world phenomena (including psychological, social, and educational phenomena). (Johnson & Onwuegbuzie, 2004, p. 17)

Thus, the notion of research as providing an understanding of phenomena as well as solutions to practical problems has always been central in pragmatic research. Supporters of pragmatism also claim that their worldview arises from actions, situations and consequences (Creswell, 2008). These notions are highly applicable to research in social sciences, including education, as much research is done in educational contexts to understand the realities of education and learning.

The epistemology or what constitutes knowledge in the pragmatic research paradigm consists of “either or both observable phenomena and subjective knowledge” (Wahyuni, 2012, p. 70), which is “both constructed and based on the reality of the world we experience and live in” (Johnson & Onwuegbuzie, 2004, p. 18). From a social and psychological point of view, this includes “language, culture, human institutions and subjective thought” (Johnson & Onwuegbuzie, 2004, p. 18). The researcher needs to arrive at an understanding of the problem being studied and his or her main focus should be practical applied research (Creswell, 2008). This means that the researcher should draw on the methodologies that he or she determines the most suitable for investigating the
phenomenon being studied, “using pluralistic approaches to derive knowledge about the problem” (Creswell, 2008, p. 10). Pragmatism avoids the philosophical debate about the nature of reality and tends to focus on the demands of the research problem and the applicability of the outcomes. This avoidance is often seen as a weakness of the approach.

As a consequence of the ontological and epistemological stances of the pragmatic research paradigm, it optimally lends itself to a research methodology which consists of both qualitative and quantitative methods, that is to say, mixed methods. Using mixed methods allows the researcher to benefit from the strengths of both quantitative and qualitative research (Johnson & Onwuegbuzie, 2004) that best assist him or her in understanding the research phenomena, one of the much used methods in educational settings being the case study. Extensive research on using mixed methods has been done by Tashakkori and Teddlie (Tashakkori & Teddlie, 1998, 2008, 2010) and they propose that methods can be mixed in sequence, in parallel, at all stages or they can be fully integrated (Tashakkori & Teddlie, 2008). The advantage of the approach is summed up as follows,

it offers a practical and outcome-orientated method of inquiry that is based on action and leads, iteratively, to further action and the elimination of doubt; and it offers a method for selecting methodological mixes that can help researchers better answer many of their research questions. (Johnson & Onwuegbuzie, 2004, p.17)
As the starting point of the current study were the research questions, the ontology and epistemology of the pragmatic paradigm are highly applicable to research in an educational institute and the data available lent themselves to a mixed method approach. This meant that the advantages outweighed the criticism that the pragmatic paradigm has been subjected to. Moreover, triangulation of the data gathered may provide further insights into the phenomena being researched which might not have otherwise come to light.

4.2 The research design

Guided by my choice of the pragmatic paradigm and the research questions explained above, I decided that the data should include examples of students’ written work over a period of time as well as observational evidence of their approaches towards completing written assignments. In my approach to data collection the research design is non-experimental, the data is a mixture of quantitative and qualitative data and the analysis is predominantly interpretive, although some numerical data were analyzed quantitatively in order to get descriptive data of the students in the current case study. The cohort of students being investigated was limited in number and they all participated in the same academic literacy skills course, meeting almost daily in the same classroom, so the most appropriate method to facilitate such an investigation seemed to be the case study. My choice was confirmed by the three conditions that Yin (2010) claims as ideal for conducting a case study; research questions in the form of how and why, focusing on contemporary events and no control over behavioral events. This is appropriate for the
current study, the focus of which arose from my desire to find answers to the following two questions.

1. Why, despite receiving the same instruction, do successful students improve but non-successful students do not?

2. How do the successful and weak students approach writing tasks differently from each other?

I then developed those general questions into the specific research questions presented in 3.8. The case study also provides a pragmatic or interpretive researcher with enough detailed, descriptive data for him or her to be able to interpret the social realities of the respondents (Guba & Lincoln, 1994; Slavin, 2007). As a research method it focuses on both "the interpretive and subjective dimensions" (Cohen, Manion & Morrison, 2006, p. 181), being a "product of the interaction between respondents, site and researcher" (Guba & Lincoln, 1994, p. 54). It is also a useful method for investigating one or more cases very thoroughly (Richards, 2003; Blaxter, Hughes & Tight, 2006; Cohen et al., 2006). In fact, multiple case studies are recommended as a way to develop explanations (Richards, 2003), “to enable comparisons between the observed practices by subjects studied in order to obtain a more comprehensive understanding of these practices” (Wahyuni, 2012, p. 72), and "with a view to establishing generalizations about a wider population to which the unit belongs" (Blaxter et al., 2006, p. 71-72). It is also why the current study contains a two-phase case study, which is explained below.
While one cannot make generalizations on qualitatively collected data, “qualitative approaches are responsive to local situations, conditions, and stakeholders’ needs” (Johnson & Onwuegbuzie, 2004, p. 20). Other than not being able to make strong generalizations based on the findings, I am aware that case studies have some other disadvantages, too. While the case study is strongly contextual, when it comes to the actual analysis it can be difficult to define the precise scope of the context, according to Cohen et al (2006) and to decide which parts of the multitude of data are relevant (Slavin, 2007). Moreover, "the problematic nature of the relationship between case and theory building requires careful negotiation" (Richards, 2003, p. 22). However, the new insights that emerge from case studies (Pring, 2000; Slavin, 2007) provide valuable, detailed knowledge that cannot be obtained by a purely quantitative research approach (Scott & Usher, 2011). Moreover, as case studies typically produce context dependent knowledge (Flyvberg, 2006), and the aim is to gain insights into the development of first year students’ academic literacy skills, the setting provided by a case study is ideal for the current investigation. The fact that complexity is valued over generality in case studies (Ragin & Becker, 1992) encourages the researcher to adopt a variety of methods to explore the matter being studies, and it is also why the case study lends itself to the mixed methods approach at a methodological level. Furthermore, while the current study is based on the pragmatic paradigm, most studies in the area of social research are in also interpretive by nature, so the slight slant towards the interpretive paradigm in the current study, with the cases being people, justifies the use of the kinds of mixed methods explained below.
4.2.1 The two-phase case study

The current study consisted of two phases of case studies. The first phase is a case study of a group of 20 first year Arab male engineering students studying in an engineering HEI in the autumn of 2009, the year the data were collected. One of the characteristics of case studies is that they are often longitudinal (Slavin, 2007), and I collected the main data during the first ten weeks of a 16 week academic literacy skills course when the students worked predominantly on individual assignments. In addition, I identified two main subgroups of students, successful and non-successful students (see Chapter 1.6 for selection criteria).

The second phase concerns case studies of four individual students, building on the earlier findings with the intention of exploring how the more generalized findings are realized in individual experience (Yin, 2011). Two students were selected from the subgroups of successful and non-successful students, namely the most successful and the least successful student, based on the average score they had accumulated for the three written assignments at the end of the data collection period. The purpose was to monitor the progress of these four students in depth and to analyze their experiences against the experiences of the subgroups that they were selected from.
4.3 Methods of data collection

The richness of description required of a case study (Guba & Lincoln, 1994; Pring, 2000; Cohen et al., 2006; Holliday, 2006) determined my choice of data collection methods, as the purpose is to “show the different and complex facets of particular phenomena” (Holliday, 2006, p. 78). The phenomena in the current study are the 20 students who constitute a case and evidence of indicators of the development of their academic literacy skills. The six data collection methods used comprised three surveys, grade comparisons, written assignments, semi-structured interviews and classroom and instructor observations described below. The focal data were three written assignments which the students produced while they worked on their individual research projects; a literature review (Assignment 1), a proposal (Assignment 2) and a research report (Assignment 3). The first survey and Assignment 1 allowed me to establish the students’ academic level, English language skills and academic literacy skills at the start of the course. Comparing any differences between Assignments 2 and 3 and between the written work of the successful and non-successful students allowed me to identify potential indicators affecting the development their academic literacy skills. This was done by comparing the students’ grades and analyzing their written work using the notions of study skills and academic socialization. Samples of students’ written work in Appendices C, D and E show assignments with instructor comments on the right side of each page, which were generated based on the criteria in the grading rubric (Appendix I). Issues concerning the study skills perspective were deemed as grammar, punctuation and spelling according to the definition of study skills provided by Lea and Street (1998), also a focus in the final
column of the grading rubric in Appendix I. This meant that by reading the instructor comments I could see the types of study skills students struggled with and how many of the instructor comments were about issues in study skills. A comment on a grammatical error counted as one error, a comment on punctuation as one error and a comment on spelling as one error. Similarly issues regarding academic socialization which included following assignment guidelines (Appendix B) and submission guidelines (Appendix B), the correct use of in-text citations and list of references (according to the conventions of the IEEE citation system) were extracted from the instructor comments. The classroom observations helped me to find out about their approaches; to what extent they paid attention when the assignments were explained in class and how they approached the assignments, for example, based on whether they asked for clarification in class or at the end of it. Instructor observations allowed me to monitor the students’ attendance, whether they asked for assistance in office hours or via email, and to see when they submitted their assignments with regard to the submission deadlines. Two institutional surveys at the end of the course, allowed me to understand how the students had perceived their own approaches and the development of their skills.

Additional data collection methods were used for the second phase of the case study. The semi-structured interviews were based on the initial survey and designed to extract further information about the four students who formed the second phase of the case study. These students also wrote a reflective writing assignment (Appendix W) at the
end of the course, and the assignment guidelines (Appendix H) were based on the initial survey to extract further information about their approaches to completing assignments. The types of data and the ways in which the data collection methods complement each other with regard to my three research questions are described in more detail in Appendix L. The data portray the kind of thorough description of the complex phenomena being investigated that is advocated by the case study research design (Guba, 1990; Pring, 2000; Cohen et al., 2006; Holliday, 2006), and this is also evident in Appendix L. The mixed method approach to both the data collection and the eventual data triangulation enhanced the richness of the data (Johnson & Onwuegbuzie, 2004; Tashakkori & Teddlie, 2008), guiding me in providing answers to the three main research questions. I will first describe each data collection method, then the participating students, the piloting of the methods, the data collection procedures and finally the ways in which the data were analyzed.

4.3.1 Surveys

As a data gathering instrument the survey is considered to be a straightforward method for collecting the kind of quantitative data about people that is either otherwise unavailable or difficult to obtain. It is typically distributed to a random population which is considered as representative of a larger population (Brown, 2006), but as the current case study focused on 20 specific students, the surveys used consisted of purposive, convenience sampling (Tashakkori & Teddlie, 1998; Blaxter et al., 2006). While such
surveys can be seen as a possible invasion of privacy (Cohen, et al., 2006), I had the students’ informed consent to include their answers in my research data.

Three different surveys were used in the study. Survey 1 was designed by me to show the initial student profile and to provide data to contribute to all three research questions. It consisted of 11 questions, five of which were closed ones (see Appendix F). Surveys 2 and 3 were institutional surveys. The aim of Survey 2 (Appendix G) was to provide academic literacy skills instructors and course coordinators with an overview of students’ opinions regarding their learning, one of the much studied aspects in HE (Haggis, 2009). It included 11 multiple choice questions, and it was handed out to students at the end of the semester. In the current study it is used for finding answers to Research Questions 1 and 3. Survey 3 is an institutional instructor and course evaluation questionnaire, a form of institutional quality control, including 20 Likert scale type statements. Students at the engineering HEI fill it in online at the end of each semester, and instructors receive a compilation of the results. The results are compared to the average ratings of the respective departments, a low score being 1 and the highest possible score being 5. Due to the policies of the HEI, it is not possible to include a sample of this survey in the current study. Survey 3 was included to provide further information about students’ perceptions of their learning experience in answer to Research Question 3.
4.3.2 Grade comparisons

Academic achievement is not only a measure of the quality of students but also of the HEI where the students study (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006; Gibbs, 2010). It is therefore within the interest of any HEI to assist the students in becoming high achievers. Grades reflect the extent to which students have mastered individual assignments, exams or course outcomes and a longitudinal comparison of grades can be used as evidence of trends of development. The grades included in the current study were the students’ high school exit grades, TOEFL scores at the start of their first year in HE, grades for the three written assignments on the academic literacy skills course (see Appendix B, Project 1), as well as the final academic literacy skills course grades at the end of the semester and the GPAs at the end of the academic year. The quantitative data concerning the grades contributed towards answering all three research questions.

4.3.3 Students’ written assignments

How the students master writing in HE impacts the quality of their academic performance in the future (Jones, Turner & Street, 1999), as the types of reading and writing which are required in academic disciplines make up "central processes through which students learn new subjects and develop knowledge about new areas of study" (Lea & Street, 1998, p. 20). Two types of written assignments were taken into consideration. One was a piece of reflective writing, which the four students who formed the second phase of the case study wrote on their own attitudes and participation in the course (see
Appendix H for the writing prompt) at the end of the 16 week semester. It was analyzed for its content. The data acquired were utilized towards answering Research Questions 1 and 3.

The second type of writing was three consecutive assignments on Project 1 (see Appendix A for course syllabus) which each of the 20 students completed, constituting a total of 60 assignments. The assignments were written partially in class, but mainly as homework assignments. Assignment 1 was a literature review, approximately one page in length, (see Appendix C for an example) and it was later included as the literature review of a research proposal, Assignment 2 (see Appendix D for an example). Parts of the proposal then fed into the final research report, Assignment 3 (see Appendix E for an example), which was approximately 11 to 15 pages long. The students got feedback on each assignment from the instructor in the form of inserted comments (see Appendices C, D and E for examples), as well as grades according to the course grading rubric for written assignments (Appendix I). Both the instructor feedback and the student grades were taken into consideration in the analysis of Assignments 1, 2 and 3. The fact that the assignments fed into each other provided the students with the opportunity to redraft their work if they chose to do so, and it helped them to understand the recursive nature of academic writing (Crandall, 2007) which is unlike the more linear style of writing they were familiar with from school. The first assignment was used to establish the students’ academic literacy skills at the start of the course, whereas the development of the skills, if any, was
scrutinized in Assignments 2 and 3. Analyses of the three assignments using the constructs of study skills and academic socialization (Lea & Street, 1998, 2000, 2006) were used to provide answers to Research Questions 1, 2 and 3. The written assignments were analyzed for

4.3.4 Semi-structured interviews

Interviews provide data which might not become available through questionnaires or observation (Blaxter et al., 2006). Furthermore, using interviews as a means to collect data helps to ensure “that the subjective character of the experiences is not prejudiced” (Crotty, 1998, p. 83) by the researcher. It also supports the stance that knowledge "should be seen as constructed between participants" (Cohen et al., 2006, p. 267), which is the reality in a classroom setting where the instructor facilitates student learning, as in the current case. There were four interviews in total and they took place in the fifth week of the course, half way through the data collection period. The interviewees were the four students who formed the second phase of the case study and the questions were designed to investigate their general learning strategies in more depth than was possible from Survey 1, examining their written assignments or behavior in class. The questions were developed from the initial survey (Survey 1) to show if there had been any changes, for instance, in their study habits in the first five weeks in HE. An example of this is the amount of time they spent on homework daily (see Appendix J for the interview protocol) compared to their answers to the same question in Survey 1 at the start of the course. The interviews
were recorded on video with permission and transcribed (for transcriptions see Appendix V). The three codes that were identified were used to identify factors that affected the students’ approaches to their studies. They were time management skills, a willingness to adjust to the demands in HE and the balance between obligations in HE and at home. The first code indicated how much time students were prepared to spend on assignments, the second one how much effort they were prepared to put into their studies and the third one the extent to which family matters were prioritized over studies in HE. The data were used to answer Research Questions 2 and 3. This was done by comparing the interview data to data obtained from instructor observations and classroom observations, as shown in Appendix L.

4.3.5 Classroom observations

Classroom observations provide valuable information about student learning for researchers and for instructors. They can be instrumental in identifying whether learning happens, to what extent it occurs and ideally in what types of settings, revealing what the conditions are for every student to achieve the required educational goals, (Marton, Tsui, Chik, Ko & Lo, 2013). Furthermore, the importance of interaction between instructors and students in an English-medium or second language acquisition context cannot be underestimated (Walsh, 2011) and classroom observations can be used to verify how such interactions occur. It is also why I chose to record all 50 lessons that took place over the first 10 weeks of the course with a video camera. Video recordings let the researcher...
"understand much more about what goes on in a complex real-world situation" (Blaxter et al., 2006, p. 177-178) than asking the people involved would, and the goal of this type of data gathering is “to measure/document the behaviors and interaction patterns as they occur in the natural setting” (Tashakkori & Teddlie, 1998, p. 106). Moreover, recording the lessons also meant that although the data were collected chronologically, they could later on be analyzed from a thematic point of view (Holliday, 2006). Previous studies concerned with Gulf students’ perceptions on their participation in classes have mainly been based on surveys (see Zureik, 2005; Halawah, 2006; Sadek, 2009), so using video recordings for gathering data might produce new, previously unknown data (Guilloteaux & Dörnyei, 2008).

I initially decided to view the recordings over and over again using an iterative process in order to discover emerging patterns of student behaviour in class, basing my analysis on grounded theory. However, it seemed that being able to organise my observations according to categories developed for similar studies would provide more significant results. I deliberated between the Communication Orientation of Language Teaching (COLT) scheme (Spada and Frohlich, 1995) used for observation of language classrooms and teaching and the observation scheme Guilloteaux and Dörnyei (2008) developed called Motivational Orientation of Language Teaching (MOLT) in their study on instructor’ motivational practices and student motivation in an English language classroom. Both schemes included content categories for the learner and for the instructor, but as the focus in the current study is on the students’ approaches, I only needed to use the
categories that described the students’ behavior. For the purposes of the current study, the categories in the MOLT scheme seemed to capture the kinds of student behavior which I wanted to investigate more accurately with regard to the ACLITS construct of academic socialization than those in the COLT scheme, which is more instructor-oriented. Therefore I chose to use the categories in the MOLT scheme, according to which the students’ behavior is “operationalized as the students’ level of behavioral engagement in instructional events” (Guilloteaux & Dörnyei, 2008, p. 62). The variables which were used to measure the students’ motivated behavior, in other words, their level of participation are described in Table 4. They were noted at 10 minute intervals during each 50 minute lesson.

**Table 4**

**Observational Variables Measuring Learners’ Motivated behavior**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attention</strong></td>
<td>Students appear to be paying attention: They are not displaying any inattentive or disruptive behavior; they are looking at the teacher and following his or her movements, looking at visual stimuli, turning to watch another student who is contributing to the task, following the text being read, or making appropriate non-verbal responses.</td>
</tr>
<tr>
<td><strong>Participation</strong></td>
<td>Students are actively taking part in classroom interaction or working on assigned activity.</td>
</tr>
<tr>
<td><strong>Volunteering for teacher-fronted activity</strong></td>
<td>At least one third of the students are volunteering without the teacher having to coax them.</td>
</tr>
</tbody>
</table>


As there were only 20 students to observe, I further modified the last variable by omitting the specification of identifying one third of the students as volunteering for teacher-fronted activity and instead monitored the behaviors of all the students. No actual transcript is provided as it could provide identifying information that would be contrary to the HEI’s
policies. The data from the classroom observations were used to provide answers for Research Questions 1 and 3.

4.3.6 Instructor observations

While the classroom observations were recorded using a video camera, the instructor observations (Appendix K) were based on notes made by the instructor on matters that were not visible in the recordings. The value of observations is threefold. Observations provide the researcher with the opportunity to verify whether what people say they do is actually what they do, observations can be used to record behavior that might not otherwise be noticed, and when systematically recorded, they confirm the original observation even though there may have been a lapse of time between the observation and its analysis (Cohen, et al., 2006). The observations in the current study were designed to identify the students’ sense of organization and time management, as well as their eagerness to complete the assignments. In my role as a researcher I formulated six categories reflecting the kinds of behaviors which experienced instructors in HE deem as signs of the level of students’ academic socialization during their first semester in HE (Appendix K). The students were able to show the assignments to the instructor for generic feedback prior to submitting them if they did this the day before the assignment was due. The first category in Appendix K is a record of whether this occurred. The second category was about the extent to which the students were absent from class and therefore not benefitting from instruction on how to complete the assignments. The third and fourth
categories regarding frequenting the instructor’s office hours and emailing the instructor for further instructions about the assignments reflected the students’ interest in completing the assignments well, and the final two categories were about time management. As the students submitted the assignments as e-mail attachments, it was possible to record at what time the assignments were sent with regard to the assignment deadlines and I deduced that students who were well organized and managed their time would either submit the assignments well before the deadline, or at least before the deadline for the assignment. These data were seen as potentially useful for answering Research Questions 1, 2 and 3 (see Appendix L for use of these data).

4.4 The participants

After receiving the HEI’s consent to proceed with the data collection for my study, I had to select the participants. The HEI in which the study took place has a quota of 70% for Emirati students and of 30% for other nationalities, due to the fact that it is financially heavily supported by a major Emirati company. As the Emirati students formed the majority of the student body, I wanted to focus my study mainly on the academic literacy skills of Emirati students. I therefore chose the class that had the most Emirati students in it out of the two classes assigned to me in that particular semester as a case to investigate. The class consisted of 20 first year male students. During the first lesson of the academic literacy skills course, I discussed my research interest with the students and explained what their role would be, if they were willing to participate. They were given the option not to
take part in the study, but they all agreed to participate and signed the ethical consent form (Appendix M). Instructors in the HEI where the data were gathered are only provided with the students’ names and their identification numbers, so in order to find out more about the participants, I asked them to fill in Survey 1 (Appendix F), which I used to establish their entry level. All 20 students answered the questionnaire and having collated the data I received from the students, I found out that all the students were between the ages of 18 and 20 and they had all opted for studying majors in engineering subjects.

For students who live far away from home, the HEI provides dormitory accommodation on campus. Students’ living conditions can affect their studies either positively (Trowler & Trowler, 2010) or detrimentally or not at all. The results of the initial survey showed that 30% lived at home and 70% on campus. Anecdotally the students claim that the more successful students usually live in the dormitories, as they do not have as many distractions or family responsibilities as students living at home, usually with fairly large families of five to ten members. However, some students find it hard to adjust to sharing dormitory accommodation with a fellow student and this can reflect detrimentally on their studies in HE. This is why the question was included in the Survey 1. The significance of living in dormitories has been recognized by the engineering HEI where the data were collected and the dormitories have since been renovated to better accommodate first year and other students, as the buildings were originally designed as employee accommodation for a nearby company.
Similarly to the HEI’s quota mentioned above, 13 out of the 20 students in the case study were Emirati students, which is the equivalent to 65%. The remaining students consisted of two Egyptians, two Sudanese, one Palestinian, one Jordanian and one Yemeni student. All the Emirati students and the two Sudanese students had attended public schools, where English is taught as a subject but the medium of instruction is Arabic. They had then participated in the bridging course provided by the HEI prior to entering their freshman year. The five other international students had all attended English-medium private schools and had entered directly into the freshman year in the HEI having finished high school. To encourage Emirati students to study engineering, the entry level requirements for Emiratis are lower (70% GPA for the high school exit exam) than for international students (90% GPA from high school). It is therefore not surprising that the range of the high school GPAs for the Emirati students was somewhat lower (78% - 93%) than for the international students (92% - 98%).

A further prerequisite at the HEI is for the students to have a TOEFL score of 500 and above to enter the freshman year, because the medium of instruction is English and most of the students' mother tongue is Arabic. The Emirati students' TOEFL scores fell between 500 and 550, whereas the scores for the international students were between 505 and 587. Four of the students, two Emiratis and two international students, had also attended English courses other than those offered at school or in the bridging course prior to entering their freshman year. They were summer courses offered by language private
schools for students to enhance their English language skills. While both the higher high school exit level scores and TOEFL scores might indicate that the international students are advantaged in entering HE, this issue is not a main focus in the current study, as the students are a minority in the HEI where the study took place.

In order to establish the students' self-perceptions of the kind of students they saw themselves as at the start of the course, one of the questions in Survey 1 related to how good they estimated themselves to be as students on a scale from 1 to 5, where 5 was the highest score, indicating a hardworking, diligent student. 60% of students scored themselves 4, and the remainder gave themselves either a score of 3 or 5 out of 5. I also asked the students about the average amount of time they spent on homework daily. Approximately 30% of the students claimed they spent 30 minutes on homework daily, whereas another 30% stated that they typically spent one to two hours on homework. The remaining students represented the two extremes, either only studying for exams or spending three or more hours daily on their homework.

4.5 My position as researcher-participant

As well as researching the students’ academic literacy skills, I was the students’ instructor on the academic literacy skills course, and it is understandable that my position as researcher-participant can be construed as highly subjective. However, being the
instructor also had some advantages, such as having a rapport with the students. I met them in class every day (five days a week) and they were also in touch with me via e-mails and during office hours. It also facilitated the data collection, and I was able to establish a deeper insight into the students and the problems that they faced on a daily basis. By being a researcher-participant, I was able to form more "intimate and informal relationships" (Cohen et al., 2006, p. 188) with the students being observed and to gain more of the type of rich data necessary for doing a case study.

Richards (2003) identifies three challenges that TESOL teachers face when they become researchers. They are firstly the "impact of background assumptions and experiences" (Richards, 2003, p. 126) that arise from years of teaching experience; secondly, the perceived investments of the other participants towards the researcher, and finally the professional identification of being an instructor on the one hand and a researcher on the other (Richards, 2003). The first point helped me to identify the construct that I wanted to investigate. Secondly, I made sure that all the participants were aware of the research and of its implications and their right to agree or disagree to participate. Lastly, as part of the study was based on observations of verbal and non-verbal behavior, being in the classroom in a natural setting as the instructor gave me more opportunities to observe what was going on and to keep a written record of instructor observations. However, because the data included surveys, students' written work and classroom observations recorded on a video camera, I was also able to distance myself
from the social situation of the classroom, bearing in mind that due to time constraints there was a time lapse between the actual data collection and the eventual data analyses.

4.6 Data collection procedures

The data collection procedures were determined by the research questions, the data collection methods, the type of access the researcher had to the data and the amount of time available to collect the necessary data. Because the data were collected using six different methods, it was important to have a clear set of procedures. The procedures included the permission to do the study from the HEI where the data were gathered, the piloting of the data collection instruments and scheduling of the data collection, the actual collection and analyses of the acquired data. Permission to gather the data was granted both by the administration of the engineering HEI where the participants were studying and by the students themselves. Each student filled in the ethical consent form (Appendix M) in agreement.

4.6.1 Piloting the data collection instruments

I designed Survey 1 and piloted it in a parallel class which I taught. It resulted in rephrasing two of the questions and adding an alternative to one of the questions. Survey 2 (Appendix G) and Survey 3 were existing institutional data collection instruments, which had already been piloted and used for several years, so they were deemed as reliable without further piloting, as was the writing rubric for the written assignments (Appendix I).
I piloted the reflective writing task by asking a parallel class to reflect on their participation on the course in general without any guidelines, but the information value of a lot of the writing was so scarce that I devised guidelines (see Appendix H) that reflected Survey 1 for the 20 case study students. The revised reflective writing assignment was piloted in another parallel class and produced successful results. The students received assignment and course grades as percentages, and while GPAs are typically calculated on a scale from 1 to 4, they were displayed as percentages in the current study to ease comparison with other grades. There is an institutional table for this conversion in the HEI which was used in the current study. I established the interview questions for the semi-structured interviews by asking ransom students for further information about their approaches to assignments during the classroom observations in week 4. Having reviewed the recordings done for the classroom observations in week 4, I deemed the seven questions I chose (Appendix J) as the ones eliciting the most useful answers regarding the study approaches not visible in the recordings for the four students in the second phase of the case study. Other non-visible information on the students’ approaches, such as attendance and frequency of use of office hours was used to determine the points which were included in the instructor observations (Appendix T). The classroom observation method was piloted during the first lesson of the academic literacy skills course during which I varied the position of the video camera a lot and established that an exterior microphone would have been too intrusive to use as well as the video camera, which is why I decided against its use.
4.6.2 Scheduling the data collection

The data were mainly collected over a period of ten weeks in the autumn of the year 2009, except for Survey 2, Survey 3 and course final grades, which were collected at the end of the 16 week course, and the students’ GPAs, collected at the end of the academic year in June 2010. A schedule and breakdown of the data collection for the current case study is presented in Table 5 below. Instructor observations (Appendix K), including student attendance, utilizing office hours and email inquiries to the instructor about the written assignments, are not included in the schedule as they were on-going throughout the entire 16 weeks of the academic literacy skills course.
Table 5

**Data collection schedule**

<table>
<thead>
<tr>
<th>Week</th>
<th>Type of data</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ethical consent form&lt;br&gt;5x50 min classroom observation&lt;br&gt;Survey 1</td>
<td>Agreement to participate in study&lt;br&gt;Approaches to assignments&lt;br&gt;Background information, grades</td>
</tr>
<tr>
<td>2</td>
<td>5x50 min classroom observation</td>
<td>Approaches to assignments</td>
</tr>
<tr>
<td>3</td>
<td>5x50 min classroom observation&lt;br&gt;Assignment 1</td>
<td>Approaches to assignments/academic literacy skills&lt;br&gt;Academic writing, grades</td>
</tr>
<tr>
<td>4</td>
<td>5x50 min classroom observation</td>
<td>Approaches to assignments/development of academic literacy skills</td>
</tr>
<tr>
<td>5</td>
<td>5x50 min classroom observation&lt;br&gt;Semi-structured interviews</td>
<td>Approaches to assignments&lt;br&gt;Perceptions of academic literacy (second case study)</td>
</tr>
<tr>
<td>6</td>
<td>5x50 min classroom observation&lt;br&gt;Assignment 2</td>
<td>Approaches to assignments&lt;br&gt;Academic literacy skills, Academic writing, grades</td>
</tr>
<tr>
<td>7</td>
<td>5x50 min classroom observation</td>
<td>Approaches to assignments/development of academic literacy skills</td>
</tr>
<tr>
<td>8</td>
<td>5x50 min classroom observation</td>
<td>Development of academic literacy skills/approaches to assignments</td>
</tr>
<tr>
<td>9</td>
<td>5x50 min classroom observation</td>
<td>Development of academic literacy skills/approaches to assignments</td>
</tr>
<tr>
<td>10</td>
<td>5x50 min classroom observation&lt;br&gt;Assignment 3</td>
<td>Approaches to assignments&lt;br&gt;Academic writing, grades</td>
</tr>
<tr>
<td>11-15</td>
<td>Project based on teamwork</td>
<td>Not relevant to current study</td>
</tr>
<tr>
<td>16</td>
<td>Final exam&lt;br&gt;Survey 2 (in-house internal course evaluation)&lt;br&gt;Reflective writing&lt;br&gt;Survey 3 (in-house instructor/course evaluation)</td>
<td>Relevant to final grade&lt;br&gt;Perceptions of learning&lt;br&gt;Perceptions of participation&lt;br&gt;Perceptions of success of course delivery</td>
</tr>
<tr>
<td>17-18</td>
<td>Review of midterm and final course grades</td>
<td>Establishing academic success level, grades</td>
</tr>
<tr>
<td>June 2010</td>
<td>GPA at the end of the academic year 2009-2010</td>
<td>Establishing overall academic success level, grades</td>
</tr>
</tbody>
</table>
4.6.3 Collecting the data from the surveys

Having piloted Survey 1, the 20 students who represented the case filled it in at the end of the last lesson during the first week of data collection. I had the HEI’s permission to include the results of Surveys 2 and 3 in the study, and the responses were collected from the students during the last week (week 16) of the course. The results for both Surveys 2 and 3 are collected centrally from all the classes and generally used for institutional standardization and research purposes.

4.6.4 Collecting student grades to be able to produce grade comparisons

In order to monitor the development of the students’ academic literacy skills longitudinally, I determined that I would need to know each student’s grades at the start of the course (Survey 1), during the course and at the end of the course. The responses to Survey 1 supplied me with information regarding the students’ general academic level and level of English language skills at the start of the course. The students’ grades during the course were available to me as the course instructor and included the grades for assignments 1, 2 and 3, which constituted 25% of the final grade for the course. Inter-rater reliability was established by an experienced colleague grading random samples of the three assignments using the grading rubric for written assignments (Appendix I). The final course grades (see Appendix B for all components of the final grade) were also available to me as the course instructor and I used them to form the subgroups of successful and non-successful students, as explained earlier in Section 1.6. The pairs of students for my second case study were selected based on the average scores for the three written assignments. As
I wanted to monitor the students’ progress in general and not only on the academic literacy skills course, I asked the HEI’s registrar for permission to get their GPAs for at the end of the academic year to see if the GPAs correlated in any way with the students’ academic literacy skills course grades at the end of the first semester. After I submitted copies of the students’ ethical consent forms to the registrar’s office, I was provided with the students’ GPAs.

### 4.6.5 Collection of the two types of written assignments

Having spent the 10 week data collection period monitoring the development of the students’ academic literacy skills in detail, I wanted to find out how the four students in the second case study perceived their progress. That is why a piece of reflective writing (see Appendix H for prompt) was included in the data. It was a graded assignment on the course (see Appendix A), and the topic of reflection was determined at the discretion of the instructor. The students wrote the reflective writing assignment during the last week of the course in class.

The other type of writing included the three consecutive assignments (Assignment 1, 2 and 3 in Appendices C, D and E respectively) discussed earlier which students’ wrote at approximately three week intervals as their individual projects progressed. All three assignments were explained in class and students were provided with assignment
guidelines (see Appendix B), as well as submission guidelines (see Appendix A). The assignments were mainly completed outside class as homework and graded according to the course grading rubric (Appendix I). The students e-mailed the instructor soft copies of their assignments, which were then graded with regard to each section of the grading rubric (purpose, organization, content and language). The assignments also included instructor feedback in the form of comments inserted into the assignments (see Appendices C, D and E for examples). Copies of the grading rubrics, complete with scores, and of the assignments with instructor feedback were subsequently sent back to the students via e-mail.

4.6.6 Collection of semi-structured interviews for the second phase of the case study

Four semi-structured interviews, which were recorded by video camera in the classroom, were included in the current study. The recorded interviews were then transcribed. The interviews took place in the fifth week of the ten week data collection period and focused on the study habits of the four students who were selected for the second phase of the case study. The intention was to make the interviews occur in as natural an environment as possible, during class time when students worked on their projects at round tables in groups of four. Due to the facilitative role of the instructor, the students were quite used to the instructor circulating among them and occasionally asking them questions about what they were doing. The same procedure was used to elicit information about the students’ study habits outside the classroom. It meant that the
questions occurred in "the immediate context" (Cohen et al., 2006, p. 271), which increased "the salience and relevance of the questions" (Cohen et al., 2006, p. 271) and the responses.

4.6.7 Collection of classroom observation data

In order to collect data on the students’ approaches in the classroom, I bought a video camera and asked an experienced colleague for advice on how to use it and where to place it. I decided to bring it into the classroom on a tripod stand for every lesson of the first ten weeks of the academic literacy skills course. During the first lesson when the video camera was introduced into the classroom the students were clearly conscious of being recorded and looked at the video camera often, but by the second lesson only few did so, and by the end of the first week they totally ignored the video camera and behaved very naturally, even though they knew their actions were being recorded. In fact, the presence of the video camera did not even hinder some them from occasionally doing homework for other subjects during the recorded lessons as evidenced by the recordings. A problem I faced was that the lens of the video camera was not wide enough to show the whole class of 20 students at one time, so I varied the position of the camera in the classroom, moving it to a different place at the beginning of each lesson. This way I ensured that every student would be visible on a weekly basis, which was necessary as video recordings enable the researcher to get non-verbal information, for example, about posture and gestures, which provides information “concerning the extent to which learners have been socialized”
(Dufon, 2002, p. 44) into the learning community. Altering the position of the camera also made it possible to hear what students said, as the microphone on the camera was not very strong. This was important because the recordings provide denser information than field notes in that ideally every word is recorded (Dufon, 2002).

I observed the occurrences of the learner categories in the MOLT observation scheme (Appendix N) and coded them, thus performing structured observation (Cohen et al., 2006; Guilloteaux & Dörnyei, 2008). I particularly focused on the students who were grouped into successful and non-successful students, observing their motivational behaviors according to the MOLT categories (Guilloteaux & Dörnyei, 2008). All 50 lessons that occurred in the ten weeks of data gathering were recorded. The lessons which were not included in the MOLT observation categories were the ones in which students worked together in groups or prepared or presented presentations, as such activities were not within the scope of the current study. The main focus was on the way the students behaved when assignments were explained to them. This meant that 20 lessons were included in the data collected in the observation sheet. The occurrences were noted for each student for each lesson and calculated as frequencies out of 20 lessons. It would have been too time-consuming to observe each student as precisely as in the time-sampling system used in the MOLT scheme, which entails every minute to be recorded in an ongoing manner, bearing in mind that classroom observation was one of six methods used to gather data in this study.
4.6.8 Collection of instructor observations

I noted the instructor observations on a sheet (Appendix K) as frequencies of student behaviors. The categories included the amount of times students showed written assignments in advance to get extra feedback or e-mailed the instructor to inquire about course work and the amount of times students frequented office hours to ask for assistance. I also observed whether they were frequently absent without an excuse and if they submitted assignments well before or after the assignment deadlines.

4.7 Ethical considerations

Ethical considerations involve the researcher getting the participants’ informed consent and access to the HEI where the study takes place, as well as the acceptance of the management of the HEI to conduct the research in the HEI (Cohen et al., 2006). The considerations also include making sure that nothing the researcher does compromises the participants or causes any harm, and that their rights are respected at all times. This comprises the researcher respecting the individual, cultural and role differences, including those involving age, disability, education, gender, ethnicity, language, national origin, race, religion, sexual orientation, marital or family status and socio-economic status.

My first step towards managing any ethical issues that might arise in the current study was to apply for permission to pursue my doctoral studies in the HEI from the Provost and the Dean of the College of Arts and Sciences where the study took place. This
was granted. I then formulated the certificate of ethical research approval for the University of Exeter, in which I stated that I would adhere to the rules and regulations regarding informed consent, anonymity and confidentiality of the Exeter School of Education and Lifelong Learning. In line with my statement I also gave the 20 potential participants the School’s ethical consent forms (Appendix M) to sign, assuring them full anonymity and confidentiality both regarding collection and analysis of data as well its publication in view of both the quantitative and qualitative data included in the study. The participants were explicitly told that they could withdraw from the study at any point they wanted to and that they would be excluded from the entire study should they wish that to happen. I also reminded the participants of the ongoing research process throughout the observation period. However, as I was also their instructor on the course it could be that they felt obliged to participate or that an unwillingness to participate might somehow affect their grades. This was despite the fact that they were reminded that I understood that they might withdraw from the research at any stage for any reason, including cultural or religious reasons. In the year the video recordings took place, the start of the course coincided with the holy Islamic month of Ramadan, and I was aware that participants might be absent due to increased amounts of daily prayers expected of them during this month. This was significant during the first weeks, as an obvious requirement for collecting data through classroom observations was that the participants were actually present in class.
Furthermore, participants were informed that all records of data collection and analysis would be stored in a secure and safe place to ensure confidentiality. They were also told that any electronic information would only be accessed by the researcher via a home computer or password protected work computer and that all electronic and paper information would be locked in a secure place in a secure building. Finally participants were assured that the data collected would also be coded to ensure anonymity and that it would be dealt with as such also in the write up of the research. However, as the semester and year of the data collection is provided in the thesis, it might be possible for someone familiar with the HEI where the data were gathered to track which class of students were participants and possibly identify some of them based on the semi-structured interviews, behaviors based on classroom observations and in-depth descriptions in the second phase of the case study despite any coding. In order to avoid the data collected falling into the wrong hands after the research had been completed it was decided that collected written information would be destroyed by shredding and digitally recorded visual and audio information would be disposed of digitally. Due to this matter of confidentiality, it was not possible to include transcripts or extracts of the video recordings in the appendices of this study.

### 4.8 Data analysis methods

The data collection methods are all presented in a table in Appendix L, and they are linked to the research questions that they provide data for. In addition the types of data
collected are clarified in Appendix L. I compiled the table in Appendix L to assist me in understanding how the different sets of data related to each other. This was done because I am aware that one of the problems with analyzing data in case studies is that it can be difficult to define the precise scope of the context (Ragin & Becker, 1992; Cohen et al., 2006) and to decide which parts of the multitude of data are relevant (Slavin, 2007). Moreover, "the problematic nature of the relationship between case and theory building requires careful negotiation" (Richards, 2003, p. 22), especially as the study included collecting quantitative and qualitative data as well as primary and secondary data. However, the new insights that emerge from case studies (Pring, 2000; Slavin, 2007) provide valuable, detailed knowledge that cannot be obtained by a purely quantitative research approach (Scott & Usher, 2011).

Having identified which type of data would help me to answer each of my three research questions, triangulation of the gathered data allowed me to enhance the picture I had and to analyze the phenomena. Shortly after collecting any data, I confirmed the raw data with the participants by discussing it with them (Cohen et al., 2006) if there was a need to clarify any data, and, as mentioned earlier, the results for the students’ written assignments and for the classroom observations were confirmed through inter-rater reliability. To ease comprehension of the data regarding the 20 participants, the names of the six successful students were coded to begin with the letter A, whereas the names of the four non-successful students started with the letter S (see Appendix Q). The remaining ten
students who did not belong to either subgroup were designated as average students and their names were coded to begin with letters of ranging from H to R. Quantitative analysis was used for the raw, numerical data obtained from Surveys 1, 2 and 3, the grade comparisons and the instructor observations. Moreover, a comparison of the students’ grades across the 16 weeks of data collection, as well as their end of year GPA, provided me with the opportunity of identifying trends in the development of their academic literacy skills evidenced by their grades. Qualitative analysis was used for a deeper understanding of the semi-structured interviews and the data retrieved from the analysis of the written assignments and classroom observations, the latter two comprising the largest amount of data. The analysis process of the different types of data is explained in detail in the next section.

4.8.1 Analysis of the written assignments

The reflective writing assignment done in the second phase of the case study was analyzed purely for content to provide a deeper understanding of the students’ approaches to their studies in the second phase of the case study, whereas the three main written assignments were analyzed using the ACLITS notions of study skills and academic socialization (Lea & Street, 1998, 2000, 2006). A study done by Picard (2006) on the ACLITS of a Gulf University raised my interest in the ACLITS framework and prompted me to adapt to the current study. The different sections of the grading rubric for written assignments (Appendix I) coincide roughly with the ACLITS notions, namely, the language section of the grading rubric with study skills, and purpose, organization and
content with academic socialization. Combining the notions with the issues in the grading rubric made it possible to identify traits of study skills and academic socialization in the three written assignments as shown in Table 6, based on instructor comments on the assignments (see Appendices C, D and E for samples of assignments which include instructor comments on the right of each page).

Table 6

**Analyses categories of written assignments**

<table>
<thead>
<tr>
<th>ACLITS lenses</th>
<th>Study skills</th>
<th>Academic socialization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence of academic literacy skills</td>
<td>Grammar</td>
<td>Follow assignment guidelines</td>
</tr>
<tr>
<td></td>
<td>Spelling</td>
<td>Follow submission guidelines</td>
</tr>
<tr>
<td></td>
<td>Punctuation</td>
<td>Use academic articles as sources</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use IEEE in-text citations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use IEEE list of references</td>
</tr>
</tbody>
</table>

The study skills categories analyzed are mainly linguistic features, and in addition I calculated the amount of errors students had in these categories. Further probing into the categories and the instructor comments made it possible to deem the extent to which the students had mastered each category. This was described qualitatively (Appendix T), and the scale ranged from ‘very good’ (practically no errors), ‘good’ (five to ten errors in the whole assignment), to ‘small slips (more than ten errors), ‘some slips’ (an error comment
on every page) to ‘many slips’ (frequent instructor comments on punctuation issues). There was no set word count for any of the assignments, so the frequency of errors was calculated based on amount of study skills errors relative to the length of each assignment. While such a calculation does not allow for direct comparisons, it can be used to identify relative trends in the students’ study skills. Furthermore, the errors in each student’s assignments were viewed as types of errors, either pertaining to study skills or academic socialization.

The categories of academic socialization demonstrate an awareness of the kinds of traits typical to writing in HE. The students were provided with assignment and submission guidelines on the HEI’s intranet website, and the guidelines were discussed in class along with the grading rubric at the beginning of the course, and as each assignment was given to the students. The IEEE citation system is a numerical citation system established by the Institute of Electrical and Electronic Engineers, and it is the kind typically used in engineering publications. This is why it was deemed that the students should learn to use it at an early stage in their studies in the engineering HEI. The development of the students’ academic socialization was assessed qualitatively as the extent to which students adhered to the categories in Table 6, which are comparable to the categories in the grading rubric (Appendix I), as mentioned above.

4.8.2 Analysis of semi-structured interviews
The semi-structured interviews of the four students who constituted the second phase of the case study took place in the fifth week of the data collection. The interviews were
transcribed and coded according to the type of approaches to studies that the students indicated in their responses. The purpose was to find out whether their individual experiences differed from those of the subgroups of successful and non-successful students which they belonged to in order to add richness to the analysis. The following codes were revealed: time management skills, willingness to adjust to the demands in HE and the balance between obligations in HE and at home. The relationship of the codes to the types of approaches to study is as follows. Time management skills provided the students with the opportunity to get extra feedback from the instructor prior to submitting the assignment, made it possible for students to spend enough time on the assignments to produce acceptable work (according to the grading rubric in Appendix I) and to submit the assignments before the deadline. A willingness to adjust to the demands in HE meant students had taken responsibility for their own learning and showed initiative by seeking additional assistance outside the classroom by wither frequenting office hours or e-mailing the instructor for further advice. The final code was determined based on the obligations of sons in Emirati families (see section 2.3.3) to see whether students prioritized family matters over studies in their first year in HE, and whether this affected the amount of time they dedicated to their assignments.

4.8.3 Analysis of the classroom observations

The classroom observations were analyzed for what they were seen to represent both inductively and deductively (Derry, Pea, Barron, Engle, Erickson, Goldman, & Sherin, 2010). Inter-rater reliability was established by an experienced teacher-trainer who
offered to observe a recording of a lesson and place the students into categories by filling in a blank observation sheet with the categories mentioned previously in Table 4 (see Chapter 4, Section 4.5.5) for one of the lessons. Students’ comments pertinent to their studies were written at the bottom of each observation sheet, but they were omitted from the data supplied in the appendices to protect the students’ identities. The comparison showed 85% reliability, as the only point we disagreed on was the extent to which the students might have been pretending to pay attention as suggested by the teacher-trainer. The collected data was then categorized using an observation sheet according to the MOLT observation scheme, described in Table 4 above, for measures of learners’ behavior (Guilloteaux & Dörnyei, 2008) as identifiable incidents occurring in a 50 minute lesson (see Appendix N for Part A of the full observation scheme). Afterwards the frequency of the occurrences was calculated and the data were organized and analyzed (Derry, et al., 2010) with respect to the subgroups of successful and non-successful students in order find answers for Researcher Questions 2 and 3. I then organized the data in accordance with the two research questions and I perused the data iteratively and recursively to discover similarities, differences, omissions and emerging patterns. This meant that my understanding of the phenomena being investigated developed gradually and any emerging patterns or theories were "constantly tested out against further experience, data and questionings" (Pring, 2000, p. 41), as well as by cross-referencing existing data.
4.9 Dependability, credibility, transferability and limitations of the study

The fact that I chose the case study as my methodological approach enabled me to provide a rich description of the reality that I shared with the students. The dependability and credibility of an exploratory study such as this one is often questioned due to the multiple realities involved and the subjectivity of collecting data in one's own work environment, in this case the classroom. I discussed the dilemma of participant-researcher in Section 4.6. It was one of the reasons why I deliberately postponed analyzing the data that I had gathered by almost six months. This meant that I could distance myself from it as an instructor and that I could assume the stance of the researcher. In qualitative studies, dependability, known as reliability in quantitative studies, can be seen as "a degree of accuracy and comprehensiveness of coverage" (Cohen et al., 2006, p. 119) of the data pertaining to the case and the construct being investigated, and it is why I opted to gather data from multiple sources (see Appendix L) to be able to describe the studied phenomena as accurately as possible. The iterative and recursive process adopted in the data analysis meant that I reviewed the data over and over again. It also meant that, guided by the categories provided by the data collection methods and analyses procedures, I would be able to recognize any possible emerging patterns. However, I understand that had I chosen a more interpretive approach to the research, I might have gained a more personal and human interest slant to the construct of academic literacy skills, as opposed to the more data-oriented approach of the pragmatic paradigm. Moreover, as the students were non-native speakers, analyzing their ability to develop their academic literacy skills with an
emphasis on EAP might have revealed different types of results with more practical implications.

Lincoln and Guba (1985) identify operational techniques for establishing dependability and credibility in exploratory studies as factors such as "prolonged engagement and persistent observation" (p. 219) and peer debriefing for strengthening the credibility of the study (Lincoln & Guba, 1985). I was involved with the students who constitute the case for the ten weeks during which the data were gathered, as well as six additional weeks after that until the end of the academic literacy skills course. During the first ten weeks I made indirect observations of their behavior via the video recordings, as well as analyzing their written work, and inter-rater reliability (Cohen et al., 2006) was established for the written assignments and the indirect observations, as mentioned earlier. However, it could be that the students made an extra effort in their studies knowing that they were involved in a research project. Moreover, to increase objectivity, it might have been better to work on the written assignments of a class that I did not teach myself. On the other hand, that would have meant that I could not have studied the students’ approaches to their assignments to the extent that was possible in the current situation.

There are some further limitations to the study. In order to for me to have gained an even better understanding of the students' perceptions, more student interviews
would have provided a fuller understanding of their views of the on-going realities in the classroom, or perhaps a stronger microphone to be able to hear more in the classroom. It would have been optimal to do this at crucial stages during the data collection, such as after the students received the grades for their written assignments. In this way it would have been easier to monitor whether the grades they received affected their engagement and approaches to consequent assignments. Furthermore, if the students had been asked to keep journals about the development of their literacy skills, it would have aided in the analysis of the developmental process which they go through in learning academic literacy skills. However, as I had already introduced the video camera into the classroom on a daily basis, I felt that any more data gathering could have become intrusive to the students' learning experience, especially as I was the instructor of the course.

It is to be noted that while case studies are not meant to be generalized, a type of external validity, known as transferability, can be assumed in some cases depending "on a richness of description and interpretation that makes a particular case interesting and relevant to those in other situations" (Richards, 2003, p. 286). While quantitative data were also collected in this study, it is a case study, so the figures are indicative of the case, not statistically significant. However, it is important to bear in mind that often "the force of example is underestimated, while perhaps formal generalization can be overvalued as a source of scientific development" (Flyvbjerg, 2006, p. 228). The students in the case study are a typical cohort of Gulf Arab male college students (see Chapter 4, Section 4.6 on...
participants), so in view of the similar background that young men in the Gulf region share, the findings may be comparable to other similar cohorts of male students in the Arabian Gulf region. As one of the secondary aims of the study is to be able to find means to assist students in developing their academic literacy skills, it is hoped that the presentation, analyses and discussion of the findings provided in the next chapter will enable the researcher to transfer some of the knowledge into other, similar situations.

Chapter 5: Results and discussion of data
In this chapter I will present, analyze and discuss the findings of the data collected from six sources; surveys, grades, analyses of students’ written work, semi-structured interviews, classroom observations and instructor observations, to provide answers for my research questions. The findings for each of the three research questions focal to the current study are first presented and analyzed. This is followed by a discussion of the indicators emerging from the findings of both the main case study and the second phase of the case study.

The findings for Research Question 1 provide an overview of the development of the academic literacy skills of all 20 students who constituted the main case study. This is followed by findings related to any differences in the development of successful and non-successful students’ academic literacy skills in an answer to Research Question 2. The findings concerning the students’ approaches to written assignments are revealed in relation to Research 3. In order to gain a more in-depth view of the issues emerging from the findings for Research Questions 2 and 3, a portrayal of the four students who formed the second phase of the case study is provided in conjunction with findings for both research questions. This was done to understand the ways in which the differences between the two subgroups of students are realized in individual experience. Based on the presentation, analysis and discussion of the data, I hope to deepen my understanding of the construct of academic literacy skills, comprising writing strategies, research strategies and general study skills (Bury, Sheese & Katz, 2013), and the ACLITS notions of study skills.
and academic socialization (Lea & Street, 1998, 2000, 2006). I also hope to be able to provide guidelines for assisting first year students, faculty and support staff in developing students’ academic literacy skills in HE. The findings may also provide implications at an institutional level for HEIs in general and specifically for engineering HEIs.

5.1 The longitudinal development of students’ academic literacy skills

Findings regarding the longitudinal development of the students’ academic literacy skills were collected to answer Research Question 1: What are the indicators of the development of academic literacy skills, if any, which can be extracted from engineering students’ written work? The main findings were related to the three written assignments focal to the current study. Assignment 1 was the first piece of academic writing the students produced in HE, and it was used to identify indicators related to the students’ study skills and academic socialization (Lea & Street, 1998, 2000, 2006) and to establish the level of the students’ academic literacy skills at the start of the ten week data collection period, in week 3. A comparison of study skills and academic socialization features across Assignments 2 and 3 was used to provide evidence of the extent to which the students’ academic literacy skills had or had not developed during the ten week data collection period. Additional evidence of any further development of the students’ academic literacy skills after the main data collection period was provided by including the final course grade (at the end of the 16 week course) in the data gathered.
Quantitative data (Appendix P) comprised the students’ TOEFL scores and high school exit scores collected from Survey 1, the grades for the written Assignments 1, 2 and 3 and the final grade for the academic literacy skills course, as well as the GPA. As one of the assignment requirements was to use two to three academic journal articles as references, I also calculated the number of references used and how many of them were academic journal articles. To identify any developments in the students’ study skills, further quantitative data was gathered from calculations concerning the ratio of the amount of linguistic errors students produced relative to the word count in each of the three assignments which they wrote. Qualitative data were gained from the analysis of the three written assignments and classroom observations. They were used to reveal possible trends in the development of the students’ academic socialization. The categories I developed for this were the extent to which students followed submission and assignment guidelines and the use of the IEEE referencing system in in-text referencing and in compiling a list of references, which were evidence of their writing and research strategies.

5.1.1 Students’ grades as evidence of the development of academic literacy skills

Grades do not reveal specific indicators of the development of students’ academic literacy skills, but they can be used to view possible trends in the development of the students’ academic and linguistic abilities, as well as the extent and quality of their knowledge (College Success Factors Index, 2010). A compilation of the grades considered in the current study is available in Appendix P, and to facilitate comparison the grades
have all been scored out of 100%, except for the TOEFL score. The high school exit grades indicate the students’ academic ability at the start of their studies in HE and the TOEFL scores show the level of the students’ English language skills at that point. The grades for Assignments 1, 2 and 3 constituted 25% of the final course grade (see Appendix B for all course grades), and the average grade for the three assignments (Appendix P) indicates the level of the students at the end of the ten week main data collection period. The final grade for the academic literacy skills course shows the level which the students had reached by the end of the academic literacy skills course (in week 16). It is why it was also used to rank the 20 participating students who formed the main case from the most successful one to the least successful one, and to identify the subgroups of successful and non-successful students (Appendix P). The criteria for grouping the students were explained in Section 4.9.

Ranking the students resulted in three subgroups; six successful students, ten average students and four non-successful students. Data gathered about all three subgroups were used to answer Research Question 1. An overview of the longitudinal development of the students’ academic literacy skills based on the subgroup grade averages is shown in Table 7 below.

Table 7

Developmental trends revealed by grade averages

<table>
<thead>
<tr>
<th>Student</th>
<th>Week 1</th>
<th>Week 3</th>
<th>Week 5</th>
<th>Week 10</th>
<th>Weeks 3 to10</th>
<th>Week 16</th>
</tr>
</thead>
</table>

134
<table>
<thead>
<tr>
<th>subgroup</th>
<th>TOEFL score</th>
<th>High school exit score (%)</th>
<th>Average of Ass 1 (%)</th>
<th>Average of Ass 2 (%)</th>
<th>Average of Ass 3 (%)</th>
<th>Average of Assignments 1, 2 and 3 (%)</th>
<th>Academic literacy skills course grade (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful</td>
<td>534</td>
<td>92.05</td>
<td>83.65</td>
<td>91.5</td>
<td>91.8</td>
<td>89</td>
<td>92.1</td>
</tr>
<tr>
<td>Average</td>
<td>522</td>
<td>88.01</td>
<td>76.31</td>
<td>77.5</td>
<td>83.3</td>
<td>79</td>
<td>84.7</td>
</tr>
<tr>
<td>Non-successful</td>
<td>512.5</td>
<td>85.2</td>
<td>61.25</td>
<td>71.5</td>
<td>68.75</td>
<td>67.15</td>
<td>77.9</td>
</tr>
</tbody>
</table>

Both the data in Table 7 and the individual grades in Appendix P show that there is a clear developmental trend across the three subgroups during the seven week main data collection period (weeks 3 to 7 of the course), and the trend seemed to continue until the end of the 16 week semester. The successful students’ grades were consistently higher than those of the other two groups at all stages, and the non-successful students’ grades were consistently the lowest of all, which is not very surprising. In fact, by the tenth week of the course the non-successful students had achieved an average grade below 70%, which indicates that while there was some development in their academic literacy skills, the level they had reached by that time did not meet expectations as defined in the course grading rubric for written assignments (Appendix I).

The successful students’ high school exit grades ranged from 88% to 98%, gaining good study skills at school for University. The average students’ high school exit scores covered a wide range (78.9% to 96%), showing mixed levels of preparedness for studies in HE, and the non-successful students’ grades were similar to these ones. However, the non-successful students’ TOEFL scores (512.5) were on average ten points less than those of
the average students (522), so it could be suggested that the development of their academic literacy skills was mainly restricted due to their weak English language skills. It also raises the question of whether the prerequisite TOEFL score of 500 in the HEI in the current study guarantees a sufficient level of proficiency for students to develop their academic literacy skills enough to be able to study successfully in an English-medium HEI. On the other hand, a further scrutiny of the individual TOEFL scores reveals that one successful student and five of the ten average students had TOEFL scores under 510, whereas the best non-successful student had a TOEFL score of 530. The latter could be due to the score being a composite one of all four skills (reading, writing, speaking and listening) included in the TOEFL test, or it could reflect the problem of cut-off points, as this student’s TOEFL score was similar to that of students in the average group. Rosenfeld, Oltman and Sheppard (2004) pointed out that the TOEFL test was designed to evaluate English proficiency, not to predict academic success, but although language proficiency is only one of the many variables affecting success in HE, its impact is likely to be strong on non-native speakers studying in an English-medium environment.

The developmental trend across the three written assignments in Table 7 shows that all the students got the lowest grades for Assignment 1, which was the first literature review that most of the students had written, as many of them told me, their instructor, when they received feedback and grades for their assignments. They also said that they had expected higher grades for the assignment than they got, possibly based on the amount of time and effort they had put into completing the assignment. These comments were
recorded at the end of the MOLT observation scheme, and there is a small sample in Appendix U. Further evidence in the appendices is not possible due to the HEI’s policies. Assignment 1 fed into Assignment 2 (a research proposal), and Table 7 shows that the grades of all the students improved by Assignment 2. This is most likely because the students received substantial feedback from the instructor in the form of comments inserted into their assignments (see Appendix C for an example), as well as a copy of the grading rubric (Appendix I) in which the points relevant to their assignments were highlighted in the different sections consisting of purpose, content, organization and language. Students who reacted to both forms of feedback for Assignment 1 were likely to get a higher grade for Assignment 2 having understood what exactly was required of them. The benefits of heeding feedback were similar between Assignments 2 and 3 (a research report) for most students.

Despite the feedback, the students utilized the opportunity to revise their written work to varying degrees. The findings in Table 7 indicate that that the successful students had mastered writing at a level which met expectations as defined in the grading rubric (Appendix I) by Assignment 2, implying that they had benefitted from the feedback they had received for Assignment 1, and they even managed to develop their skills further for Assignment 3. This is evident from the decrease in errors between Assignments 1 (Appendix Q shows a group average error ratio of 2.7) and 2 (Appendix T shows a group average error ratio of 0.9). In other words, because Assignment 1 (a literature review) was part of Assignment 2 (a proposal), I could both compare the students’ achievements to
each other and follow each student longitudinally, noting whether they had reacted to the feedback they had got in a previous assignment, in this case the difference in the amount of errors between the literature review in Assignment 1 (Appendix Q) and Assignment 2 (Appendix T). In comparison the average students seemed to need more time and more feedback, showing little development between Assignments 1 and 2, but being able to meet expectations by Assignment 3. The non-successful students’ grades for Assignment 1 were significantly below expectations, and although the grades improved by 10% between the first two assignments (Table 7), the grades of most of these students slightly decreased for Assignment 3. This was an interesting finding which is discussed in more detail in conjunction with Research Questions 2 and 3.

The final course grade (Table 7) was given in week 16. It was a combination of the grades which the students had accumulated during the 16 week course, as shown in Appendix B. Table 7 shows that the academic literacy skills of the successful and average students, as evidenced by the grades for the written assignments remained at approximately the level they had reached by week 10, which was sufficient as both subgroups had managed to meet expectations in their written assignments by that time. However, the non-successful students’ grades increased in the latter part of the course which it could be due to the fact that the last six weeks of the course entailed doing a research project in teams (see Project 2 in Appendix B), and anecdotal evidence confirms that these students often join teams of students with stronger academic literacy skills. The benefits of teamwork have been recognized in HE, and teamwork skills are important for engineering students as
they typically work in teams in their future workplaces, but in this case it meant that the non-successful students’ grades were perhaps slightly inflated at the end of the course, not reflecting the development of their academic literacy skills in the way that the individually written assignments in the first part of the course did.

5.1.2 An overview of the students’ academic literacy skills based on their first academic written assignment in higher education

At the beginning of the academic literacy skills course, the assignment guidelines, general submission guidelines for written assignments and the way the assignments were graded were explained to the students in class and this information was also provided on the HEI’s intranet, as the assignments were done partly in class and partly as homework. The students were given assistance in using the IEEE referencing system first by the instructor and then by a librarian in a one hour library session in the second week of the course. They were also encouraged to ask the instructor, the librarian and Writing Center tutors in the HEI for assistance if they felt they needed it.

An analysis of Assignment 1 provided a formative overview of the students’ academic literacy skills at the start of the data collection period. As it was the first piece of academic writing required of the students in HE, it was not feasible to focus on the development of their academic literacy skills at this stage. The students wrote the assignment after they had selected their research topics for Project 1 (see Table 1 in Appendix B) and found two or three relevant academic journal articles each. They were
required to use the numerical IEEE referencing system for in-text citations and lists of references. The notion of study skills was used to analyze their writing strategies, and the notion of academic socialization was used to see the extent to which students understood what they were supposed to do, revealing insights into their research strategies and general study skills.

5.1.2.1 Evidence of study skills in Assignment 1

Data concerning study skills (grammar, punctuation or spelling) consisted of an analysis of instructor comments (see Appendix C for an example of Assignment 1 with instructor comments) for Assignment 1 and a comparison of the students’ error ratios. The number of instructor comments made on study skills issues in Assignment 1 varied from zero to 50, and intrigued by these findings, I calculated the ratio of instructor feedback comments on study skills relative to the word count of each student’s Assignment 1 by dividing the amount of comments with the word count of each assignment (see Appendix Q) in order to ease the comparison of the level of the students’ study skills. A value of zero indicated that there were no comments on linguistic errors. The higher the value, the more linguistic errors there were.

First the most frequent issues related to study skills based on the instructor’s feedback comments for Assignment 1 are shown in Table 8 below. The examples are from the assignments of successful, average and non-successful students. The successful students’ names begin with the letter ‘A’, the non-successful students’ ones with the letter ‘S’ and the rest of the names are those of the average students.
Table 8

**Features of study skills in Assignment 1**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Grammar</th>
<th>Spelling</th>
<th>Punctuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issues</td>
<td>- faulty word order, e.g. 'accidents involving this group of age (Ahmed)' - use of contracted forms, e.g. However, [1] didn't consider the... (Abdulla) - wrong use of transition words, e.g. you feel more comfortable. And we will know much better about that when we get deeper into the research. (Amer) - wrong verb and noun pairing, e.g. to make a research (Amer) and confusion between countable and uncountable nouns - wrong verb tenses or forms, e.g. a lot of studies has been made... (Anwar) - wrong word choice, e.g. students live in pairs or triples in the same room (Abdelaziz) - omission or wrong choice of prepositions, e.g. at the same night of the exam (Fares) - omission of articles, e.g. living in hostel (Ibrahim) - mixing singular and plural forms of nouns and verbs, e.g. Goal is things that you...(Nayef) - inconsistent use of referents such as 'it' and 'they', e.g. When the student moves to the college they have to study... (Omran) - unnecessary use of referent in relative clauses, e.g. I chose three things that I am going to talk about them in... (Sager)</td>
<td>- inconsistent use of small and capital letters in the list of references and elsewhere, e.g. In This research we... (Hani) - inconsistent spelling, e.g. your study in the collage (Saif)</td>
<td>- use of brackets to emphasize points e.g. between the age of (18-27)... (Anwar) - misuse or omission of apostrophe, e.g. factors that affect student's academic achievement (Khalfan) - lack of space before punctuation, e.g. According to[1] these...(Nasser) - misuse of punctuation resulting in sentence fragments and run-on sentences, e.g. But when they move to the college, they face many problems. (Omran) - space before punctuation, e.g. ...investigate the deference. In study 1... (Rashed) - leaving the source reference outside the sentence it refers to, e.g. Home can support you but not all the time. [1] (Saif) - misuse or omission of commas, e.g. students need to remember several things such as, homework... (Sultan)</td>
</tr>
</tbody>
</table>

The grammatical features in Table 8 include a mixture of items, some of which might be literal translations from the students’ L1 into English. Such errors can be due to the students’ limited English language skills or wrong word choice. Observation showed that
students hardly ever used academic dictionaries, as many of them seemed to prefer easily available aids such as Google translate or online dictionaries on computers or mobile phones which offer limited choices and explanations of how the words chosen are used in context.

The spelling and punctuation issues shown Table 8 are most likely due to a lack of proofreading skills, unwillingness to proofread one’s work prior to submitting it or the lack of time to do so. Furthermore, many of the common spelling and punctuation problems in Assignment 1 (Table 8) could have been avoided if the students had set the language option to English in Microsoft Word which they used for writing the assignments, because it would have enabled them to benefit from the spellchecker feature. It was a problem because most of the computers in the HEI and presumably many of the students’ own ones had Arabic as the default language, and despite having been advised to change it into English, many of the students did not do so. This was evident from the instructor comments inserted in the assignments when they appeared written from right to left (see Appendix D for an example), in the same direction as Arabic is written. Other explanations for the students’ fairly random use of punctuation could be that they were not familiar with punctuation rules in English, or that they were not aware of the ways in which the rules differ between English and Arabic. The differences between the two languages account for the varied use or lack of spacing and for the use of brackets around words or numbers for emphasis (see first punctuation example in Table 8). The latter is the Arabic way to
highlight matters according to Arabic speaking colleagues and the students themselves (classroom observation).

The second way of looking at study skills was to calculate the ratio of study skills errors in relation to the length of the assignments. There was no set word limit for any of the assignments, but students in the different subgroups wrote assignments of a similar length. This means that while the ratios are only relatively comparable, the trends indicated by them are evident. The exact number of comments on linguistic errors for each student, the length of the assignment measured in words for Assignment 1 and the subsequent ratios are provided in Appendix Q. The subgroup averages are shown in Table 9 below for the error ratios and the length of the assignments.

Table 9

Subgroup averages of the error ratio and the word count in Assignment 1
<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Average error ratio in Assignment 1</th>
<th>Average amount of words in Assignment 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful students</td>
<td>2.7</td>
<td>740</td>
</tr>
<tr>
<td>Average students</td>
<td>4.8</td>
<td>640</td>
</tr>
<tr>
<td>Non-successful students</td>
<td>7.7</td>
<td>630</td>
</tr>
<tr>
<td>All subgroups</td>
<td>5.1</td>
<td>670</td>
</tr>
</tbody>
</table>

As could be expected, the successful students had the least errors despite submitting the longest assignments, whereas the non-successful students had significantly more errors although their assignments were on average over 100 words shorter. However, two exceptions stood out against the subgroup averages and they are highlighted in bold type in Appendix Q. They were the low error ratios of the two average students Mahmoud (2.4) and Rashed (2.7), which were well below their subgroup’s average (4.8) and within the range of that of the successful students (2.7). Mahmoud’s high school exit score was 87% and his TOEFL score was 503. Despite his fairly low TOEFL score, the relatively few errors in Mahmoud’s assignment indicated that he had most probably either proofread the assignment well, discussed it in the HEI’s Writing Center or had it checked by someone with superior English language skills, showing that he had good general study skills. Anecdotal evidence from both instructors and students shows that this occasionally happens. The other exception was Rashed’s low error ratio. His word count (1,209 words) was substantially higher than that of all the other students in the case study for Assignment 1 (Appendix Q). In fact, excluding his efforts, the ratio for the subgroup of average
students would have been 5.0 and the word count 580, possibly more indicative of the reality, as four out of the ten students in this group wrote assignments that were under 500 words in length (Appendix Q). Rashed’s high school exit grade (94.6%) and his TOEFL score (550) were among the highest of all the students, indicating that he was a successful student. However, by the end of the 16 week course he ranked as the weakest student in the subgroup of average students (Appendix P). It was a surprising finding, but I found out the reason when I accidentally met Rashed on campus shortly after I had started analyzing the findings in the current study. I commented in passing on his grades, and he replied that he had suffered from serious family problems during the semester in which the data were gathered, resulting in exceptionally low grades in all his subjects. Rashed’s situation shows that linguistic analysis will only ever give a part of the picture, possibly even resulting in mistaken interpretations. It also reveals the importance of both academic and social integration in HE (Kuh et al., 2006).

5.1.2.2 Evidence of academic socialization in Assignment 1

The criteria for identifying academic socialization comprised the ability to follow assignment and submission guidelines, to use in-text citations and formulate lists of references according to IEEE guidelines, and to choose academic articles as references. Evidence of academic socialization regarding each student (Appendix R) was measured qualitatively using the following criteria to determine whether the defining features of academic socialization had been fulfilled; ‘yes’, if the features were fulfilled, ‘almost’ if
there were few errors, ‘somewhat’, if there were several errors and ‘no/none’ if there was no attempt to fulfill the features. The criteria for the list of references were ‘correct’ or ‘almost correct’, ‘a rough attempt’ or ‘incorrect’. The total number of articles selected as sources was calculated, as well as how many of them were academic journal articles. Table 10 shows a collation of the evidence related to the features of academic socialization in Assignment 1. The percentage of students in whose writing the features were evident is shown, as well as the extent to which they had adhered to them. The first two features relate to evidence of general study skills, whereas the latter three relate to evidence of the research strategies which the students had when writing Assignment 1.

Table 10

*Features of academic socialization in Assignment 1*

<table>
<thead>
<tr>
<th>Student Subgroup</th>
<th>Followed assignment guidelines</th>
<th>Followed submission guidelines</th>
<th>Used in-text citations</th>
<th>Produced a correct list of references</th>
<th>Average number of articles used as sources (number of journal articles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful</td>
<td>90% yes 10% almost</td>
<td>80% almost 20% somewhat</td>
<td>100% correct</td>
<td>100% almost correct</td>
<td>4 (2 or 3)</td>
</tr>
<tr>
<td>Average</td>
<td>50% yes 10% almost 40% somewhat</td>
<td>30% yes 60% almost 10% no</td>
<td>60% correct 40% somewhat correct</td>
<td>10% correct 60% a rough attempt 30% incorrect</td>
<td>3 (0 or 1)</td>
</tr>
<tr>
<td>Non-successful</td>
<td>50% somewhat 50% no</td>
<td>75% somewhat 25% no</td>
<td>25% correct 25% almost correct 50% none</td>
<td>50% a rough attempt 50% only web links</td>
<td>2 to 3 (0.5) One student had used two journal articles.</td>
</tr>
</tbody>
</table>

A comparison of the extent to which features of academic socialization were evident in Assignment 1 (Table 10) clearly shows that while the successful students had few
problems, both the average and non-successful students were challenged by the assignment guidelines, the use of a citation system in their writing and finding academic journal articles to use as sources. Classroom observations showed that the students’ most common reason for the lack of journal articles was that they could not find articles about their topic, most likely because they were not used to using data bases as search engines, indicating that the students lacked the necessary information literacy skills for conducting research. The submission guidelines (see Appendix A) concerned layout matters, such as the information to be included on the cover page of the assignment, fonts, line spacing, margins and page numbering, and despite the fact that most students in all the subgroups seemed to be able to almost or somewhat follow these, they could have avoided most of the errors if they had had some assistance in developing their digital literacy skills.

While most students made an attempt to produce literature reviews (Assignment 1), the two weakest non-successful students produced pieces of writing more reminiscent of the kinds of personal essays they were used writing at school (Guthrie, 2011; Woods & Skrebels, 2011). It could be that they did not understand or pay attention in class when the assignment was explained, but it is difficult to identify this from classroom observations. Another reason might be that they did not refer to the HEI’s intranet to read the assignment guidelines or the grading rubric provided, or they did not allocate themselves the time to do so. Other issues revealed by studying features of the students’ academic socialization in Assignment 1 were that most of the average and non-successful students somewhat
understood the notion of in-text citations but had many errors in their lists of references, or merely provided web links to the sources instead of attempting to provide the full information required according to and in the format of the IEEE citation system.

5.1.3 Developmental trends evidenced in Assignments 2 and 3

Having established the level of the students’ academic literacy skills in Assignment 1, I wanted to explore how the skills developed across Assignments 2 and 3. Assignment 2 was a research proposal (for assignment guidelines see Appendix B, for an example see Appendix D) and Assignment 3 was the final research report (for assignment guidelines see Appendix B, for an example see Appendix E). The assignments were graded using the same grading rubric (Appendix I) as for Assignment 1, and to gather more insights into any developmental trends, the partial grades which the students received in the four categories of the grading rubric were also scrutinized for these two assignments. The weighting of each category is shown in brackets; purpose (20%), organization (20%), content (30%) and language (30%). Three of the categories correspond roughly to academic socialization (purpose, organization and content), whereas the language category corresponds to study skills. The breakdown of the students’ grades for the two assignments is provided in Appendix S. The qualitative analysis of study skills features (Appendix T) ranged from ‘very good’, ‘good’ and ‘small slips’ to ‘some slips’ and ‘many slips’. In addition, the error-to-word count ratio for both assignments is included in Appendix T, as well as whether the students’ computers were set to English or Arabic.
Evidence of the development of the students study skills is discussed first and then that of the development of academic socialization.

5.1.3.1 Developing study skills in Assignments 2 and 3

Approximately 40% of the successful students had met the expectations required in the grading rubric for study skills by Assignment 2 and continued to do so in the subsequent assignments (Appendix P). The remaining 60% managed to develop their study skills by Assignment 3. It was evident from their grades (90% and above) for Assignment 2, and the minimal difference their error-to-word count ratios between Assignments 2 and 3, averaging 0.9 and 0.56 respectively (Appendix T) compared to the ratio of 2.7 in Assignment 1 (Appendix Q). The additional fact that the scores in the grade breakdown categories (Appendix S) were similar to each other showed that their style of writing had developed in all these aspects, and that it had developed from a personal one to a more academic one indicating an improvement in their academic literacy skills (Wingate, Andon & Cogo, 2011).

The average students showed the most development between Assignments 2 and 3, apart from Mohamed whose grades slightly decreased, and Omran and Rashed whose grades remained the same for both assignments (Appendix S). Rashed’s predicament of family problems was discussed earlier in conjunction with Assignment 1, whereas
Mohamed and Omran both had coherence problems in the organization category of the grading rubric (Appendix S), classified in the current study as part of academic socialization. Here is an example from Mohamed’s Assignment 2.

Surface learning depends greatly on memorizing rather than understanding, without relating what the student gain knowledge of or even just keeps in mind with real life. (Mohamed)

The grades of all the non-successful students decreased from Assignment 2 to Assignment 3, apart from Sultan’s grade which nominally remained the same (Appendix P). There was a minor improvement in the error-to-word count ratio of this subgroup between the two assignments (from 2.8 to 2.5) and a significant one compared to the ratio in Assignment 1 (7.7), (see Appendix T), but there were still many grammar slips and some spelling slips, although the use of punctuation had improved. The subgroup’s word count average for Assignment 2 was 956, slightly lower than that of the other two groups (over 1,000 words), but for Assignment 3 it was as long as that of the average students (2,264 words) as shown in Appendix T. These results seem to indicate that providing the students with feedback and opportunities to revise written assignments develops their academic literacy skills, as evidenced by the improvement in their study skills. It could also be that the students had learned to proofread or to benefit from the services of the Writing Center prior to submitting their work.
5.1.3.1 Developing academic socialization in Assignments 2 and 3

Qualitative findings of Assignments 2 and 3 based on instructor feedback comments in the students’ written assignments are provided in Appendix T as evidence of the development of academic socialization. The evidence was seen to be ‘very good’, ‘good’ or ‘somewhat’ visible, unless there was ‘none’. Specifically with regard to the use of references, the criterion of ‘incorrect’ was added (Appendix T).

The successful students had revised their writing according to the instructor feedback for Assignment 1, and as a result their referencing was very good in Assignments 2 and 3 (Appendix T). They followed the assignment and submission guidelines very precisely for both assignments (Appendix T), as evidenced by the grades which they got for the assignments (Appendix S). In doing so they demonstrated that they had successfully reached the level of academic socialization required in the academic literacy skills course. Academic socialization is, however, the trait in which the average students’ development deteriorated from the best average student to the weakest average student quite systematically, as can be seen by the wording of the qualitative criteria in the columns indicating academic socialization in Appendix T which ranges from ‘very good’ to ‘somewhat’ and incorrect’. There was some improvement in how these students followed submission guidelines in the assignments, but they only somewhat followed assignment guidelines in Assignments 2 and 3, although there was a slight improvement in the in-text referencing and lists of references between Assignments 2 and 3 (Appendix T).
It could be that in receiving feedback in Assignment 2 for the same errors regarding these matters in Assignment 1, they realized the importance of providing the citations and references according to the IEEE guidelines.

Similarly to the weaker average students, the non-successful students only somewhat followed the guidelines for completing Assignment 2, for submitting it and for in-text citations and referencing (Appendix T). They either had somewhat correct references or completely incorrect ones in their lists of references in both Assignments 2 and 3 (Appendix T). These students seemed to have reached a plateau in Assignment 2 in both their study skills and academic socialization. It meant that they could not meet the expectations stated in the grading rubric of the academic literacy skills course even though they participated in the same course as the other two groups of students. In an attempt to understand the issues regarding these students more extensively, I compared their written work and approaches to studies to those of the successful students. The findings are presented and analyzed in the following sections.

5.2 Differences in the development of the written work of successful students and non-successful students

Having acquired an overview of the development of the students’ academic literacy skills and some indicators of the ways in which the skills did or did not develop, I wanted to specifically investigate any differences in the written work of the successful and non-
successful students by comparing the findings related to these two groups of students. This is why I formulated Research Question 2: What are the differences, if any, in the development of the written work of successful students and non-successful students over a ten-week period? The grouping of the students was described in Chapter 4, Section 4.4.1, and resulted in the identification of six successful students and four non-successful students. In order to avoid repetition of the findings already described in relation to Research Question 1, a combination of the findings (see Appendix L) was used to answer Research Question 2. Longitudinal quantitative data on the development of the students’ academic literacy skills was provided by findings from grade comparisons (Appendix P) and qualitative data from the analysis of the three written assignments (Appendices R and T), classroom observations (Appendix U) and instructor observations (Appendix K). Additionally, findings from the second case study discussed in Section 4.4.1 were utilized to answer Research Question 2. The study comprised the successful students Ahmed and Amer and the non-successful students Samir and Sultan.

5.2.1 The development of the successful students’ written work

It seems that the six successful students in the current study had acquired the appropriate study habits and English language skills to be able to develop their academic literacy skills at school prior to entering HE. Their high school exit score average was 92.05% and their TOEFL score average was 534, although one student in this subgroup (Anwar) did have a TOEFL score of 505. According to Kuh et al., (2006), students’ pre-
college experiences as well as "where and how they attend college can all make a difference in their chances for obtaining a baccalaureate degree or another postsecondary credential" (p. 17), and to their academic achievement in general. Some schools focus on providing students with the basic tools for academic achievement, and educators assume that students transfer learned skills from one context to another (Barnett & Ceci, 2002), which the six successful students did, albeit in different ways. The top two students (Ahmed and Ali) improved across all three assignments. Three students (Abdulla, Amer and Anwar) improved in Assignment 2 but got slightly lower grades for Assignment 3, the final research report. The students were inclined to repeat a description of the results in the discussion section of the report which also lacked any references to the literature reviews. One student (Abdelaziz) got a comparatively low grade for Assignment 2, as some the grammar slips in the assignment hindered the reader’s understanding as the following examples illustrate.

...the availability of information that require to presence in the campus.

(Abdelaziz)

In addition, to determine what makes the study environment beneficial or disadvantageous for the college students. (Abdelaziz)

However, he managed to show significant improvement in Assignment 3, perhaps due to a combination of heeding instructor feedback and proofreading his work. The investigation of the ways in which the writing developed across Assignments 1, 2 and 3 revealed a variety of aspects of the three main traits of academic literacy skills (Bury, Sheese & Katz, 2013) which the successful students had in common. They had sufficient writing strategies
assisted by good English language skills, good research strategies as shown by the amount of journal articles they used and good general learning strategies to be able to complete the assignments at a high standard. Findings related to the students’ writing and research strategies are presented here, whereas findings related to their general study skills are shown in answer to Research Question 3 which concerns their approaches to completing assignments.

5.2.1.1 Good writing strategies as a means to develop academic literacy skills

The findings related to the written work of successful students show that by Assignment 2 most of the students had acquired proofreading skills, the ability to seek assistance outside lessons and the basic kinds of digital literacy skills to be able to benefit from features of Microsoft Word, such as adjusting language settings, using the spellchecker feature to assist in study skills features, as well as correct layout features such as page numbering, which were requirements in the submission guidelines. When they consulted the instructor about feedback on their assignments, they also referred to the grading rubric (instructor observation) which suggested that they were aware of the different categories in it and the standards which they were required to meet to gain high grades. It appeared that these students showed a willingness to develop their written work to be able to meet the course requirements at a high standard, and most of them were capable of doing so by Assignment 2. A sample of the kind of writing that these students were capable of by the end of their tenth week in HE is shown Appendix E. It is the final report (Assignment 3) written by Ahmed, the most successful student in the current study.
5.2.1.2 Adopting the required research strategies to develop one’s academic writing skills

Having acquired the necessary study skills either prior to entering HE or at the very latest after receiving feedback for Assignment 1, the successful students seemed to focus on developing their academic socialization. An example of this is that most of the sources they chose for their research were from academic journals (see Appendix R), indicating that they had the digital literacy and research skills to find academic journals which were relevant to their research projects, and that their reading skills were good enough to identify relevant articles and to tackle the kind of dense and relatively abstract language in such articles (Cummins, 2008). Furthermore, their use of in-text citations and their lists of references were very good in Assignments 2 and 3 (see Appendix S) apart from one student’s (Amer), whose written work is analyzed more closely in conjunction with the other three students who formed the second phase of the case study. In conclusion, the successful students seemed willing to make the effort to develop their academic literacy skills immediately on receiving feedback for Assignment 1 and continued to do so in subsequent assignments.

5.2.2 The development of the non-successful students’ written work

Four students fell into the category of non-successful students, namely Samir, Saif, Sager and Sultan (Appendix P). This subgroup of students seemed at a disadvantage right from the start of the academic literacy skills course. The average of their high school exit grades was 85.2%, slightly lower than that of the average students, and much lower than that of the successful students (92.05%). Their TOEFL score average was also much lower
(512.5) than that of the successful students (534) as shown in Appendix P. All four students had attended public schools which tend to emphasize rote learning (Sowa & De La Vega, 2008), not a useful learning style for developing one’s academic literacy skills. While it was not expected that any of these students’ academic literacy skills would develop much during the data gathering period, based on the grades their writing actually deteriorated between the assignments (Appendix P). It seems that the students were discouraged by the low grades they got for Assignment 1. Perhaps they felt that they had put a lot of time and effort into writing the assignment and because of the low grades they received, they were not prepared to put any more effort into the two subsequent written assignments. They seemed to have some issues with their writing strategies and major issues with their research strategies and general learning strategies.

5.2.1.1 Minimal development in writing strategies

The average ratio of comments on study skills errors in Assignment 1 was 7.7, much higher than that of the successful students (2.7) (Appendix Q), indicating issues in study skills. Examples of the kinds of errors produced by Saif, Sager and Sultan are shown in Table 8 on page 136. Surprisingly the number of errors decreased significantly in the longer Assignments 2 and 3, the ratio being 2.8 and 2.5 respectively (Appendix T), indicating a potential improvement in study skills. The reduction in errors indicated that the students had either proofread the assignments themselves or, more likely, had them proofread prior to submitting them. As was to be expected, there were still some
grammatical errors and spelling slips in their writing, although their use of punctuation had become good (Appendix T), even though all the students, apart from Samir, had their computers set to Arabic in Microsoft Word for all three assignments (Appendix T). However, despite the relatively few errors, most of the students’ grades decreased in almost all the categories of the grading rubric between Assignments 2 and 3 (Appendix S), apart from Sultan’s grade, and it only increased nominally. It seemed that the students did not relate to the grading rubric at all and frequently ignored the instructor’s feedback comments which required more than a straightforward correction such as ‘why?’ or ‘please write an introductory paragraph for this section’ (examples of instructor comments in written assignments). As a result the same mistakes remained in the subsequent assignments. Moreover, the non-successful students only somewhat adhered to the submission guidelines, although the two weakest students eventually managed to follow the submission guidelines well (Appendix T).

5.2.1.2 Fledgling attempts at developing research strategies

With regard to academic socialization all four non-successful students had only somewhat followed the assignment guidelines and two of them had not understood the purpose of Assignment 1 properly (Appendix S). Only the most successful student in this subgroup had used academic journal articles as sources and his in-text citations were correct (Appendix S), whereas the two weakest students had no in-text citations in any of their assignments. The two best students in this subgroup had made a rough attempt at
producing a list of references according to IEEE guidelines instead of only providing web
links to the sources, which was what the other two students did (Appendix S). Similarly to
issues concerning writing strategies, apart from the best student, none of the students
showed any development in their in-text citations or lists of references despite instructor
comments referring them to the IEEE guidelines. All in all it was evident that while the
successful students attempted to develop their academic literacy skills immediately on
receiving feedback for Assignment 1, the non-successful students only nominally
attempted to develop their skills in Assignment 2 and showed virtually no improvement by
Assignment 3. It is hoped that investigating how the more generalized findings regarding
the two subgroups are realized in individual experiences will reveal further insights into
these issues.

5.2.3 The second phase of the case study: insights into individual experiences within
the subgroups of successful and non-successful students

To further explore the findings related to Research Question 2 and to obtain a
deeper understanding of the differences in the written work of successful and non-
successful students, four contrasting profiles of individuals were developed for a second
case study from the two subgroups. In addition, the four students’ approaches to
completing assignments are discussed in conjunction with findings related to Research
Question 3. The students were the best student and the weakest student in the two
subgroups based on the composite grade for Assignments 1, 2 and 3 (Appendix P). The
assignment grade averages are indicated in percentages after the students’ names. Ahmed
(96.3%) and Amer (81.2%) were selected from the group of successful students, and from the group of non-successful students Samir (71%) and Sultan (56.7%) were included. All four students were Emiratis (Appendix O).

5.2.3.1 Ahmed, the most successful student in the case study

Ahmed was what instructors would call a very good student. His grades were consistently high during the data gathering period, at the end of which his grade average was 96.3% (Appendix P). A breakdown of his grades for Assignments 2 and 3 (Appendix S) and comments on his study skills and academic socialization (Appendix T) show that he was consistently successful in developing his academic literacy skills and that he had acquired the necessary writing and research strategies to be able to study successfully in HE. Further proof of this was his high GPA of 90% at the end of the academic year (Appendix P). He had few errors in Assignment 1 for which he had used journal articles, and while there was one numbering slip in his in-text citations, his list of references was written entirely according to IEEE guidelines. Few of the students in the main case study reached this level by Assignment 3. An extract from his Assignment 1 on the topic of traffic accidents shows the kind of writing skills he had.

[1] defined sensation seeking as the need for complex experiences and the willingness to take any risks for the sake of such experiences. Sensation seeking is higher in male drivers [1, 2] and is highest in the age group between 16-19 years
old [1]. As young male drivers rate highly on sensation seeking personality, [1] suggested that young men tend to drive dangerously. (Ahmed)

The extract above shows that Ahmed is capable of using in-text citations correctly and there are no mistakes in this writing passage. The consistently high scores revealed in the analysis of the three written assignments that this student wrote (Appendices Q, R, S, T) indicated that he was exceptionally well prepared for HE, possibly having benefitting from both a good school background as well as the encouragement and support of a family with an academic background, which is not very common in the UAE due to the recentness of its HE system. Classroom observations reveal that he was the most active student to participate in class and that he always volunteered for teacher-fronted activities (Appendix U). Based on the specific types of questions he asked in class to clarify details when assignments were explained, it was evident that he had read the assignment guidelines prior to attending class, showing that he had prepared for it in advance (classroom observation). His attention frequency was high (Appendix U) and he was never absent without an excuse (Appendix K). It seemed that he was either intrinsically motivated or he was living up to the high expectations of his family. I am inclined to believe in the former explanation, as he always displayed a very positive demeanor during lessons. While his writing and research strategies were superior to those of most of the successful students up to Assignment 2, most of the other students in his subgroup reached his level by Assignment 3 (Appendices S and T). He also mentioned in his reflective writing (see Appendix H for prompt and Appendix W for his reflective writing) that he spent time
helping other students, so perhaps they benefitted from this, too. His general learning strategies are discussed in conjunction with Research Question 3. All in all his academic literacy skills developed much faster than those of all the other students.

5.2.3.2 Amer, the lively, sporty student

Amer started the academic literacy skills course with the same high school exit grade as Ahmed (88%) and with a TOEFL score of 527 (Appendix P). However, after seven weeks his grade average for the written assignments was 81.2%, the lowest in the group of successful students (Appendix P). An example of his written work is available in Appendix D. His attendance was high (Appendix K), but he did not actively participate in class (Appendix U) spending a lot of time chatting to whoever sat next to him (classroom observation), although his perception was that he did participate, as seen in the extract from his reflective writing assignment (see Appendix H for prompt).

_I guess I participate in most of the communication classes and try to react with the class and the topic._ (Amer)

He had attended a public school, and similarly to Ahmed he lived at home (Appendix O), Similarly to many of the average students, he was easily distracted (Appendix U, classroom observation), which hindered his knowledge of what was required for the written assignments. He also seemed over-confident in his English language skills, as his spoken English was very good (classroom observation). It meant that he occasionally
wrote in an informal style as the following example from Assignment 1 on the advantages of living at home or in dorms shows.

...there is also the disadvantage of noise, so there won’t be no peace and quiet like home. (Amer)

However, towards the end of the academic literacy skills course, outside the data collection period for the current study, he focused more rigorously both in class when assignments were explained as well as on the written assignments he produced resulting in a substantial improvement in his study skills and academic socialization (classroom observation). Amer had a good background for studies in HE, but the development of his writing was initially stunted due to his distractive behavior and his apparent assumption that good oral communication skills were enough to produce good written work in HE. The change in his attitude could have been prompted by midterm grades (given in week 9) which may have been lower than he had anticipated in other subjects, too. In fact his GPA at the end of the academic year was only 78.5%, possibly confirming this assumption.

5.2.3.3 Samir, the active student with weak English language skills

Samir was a very positive student (classroom observation). His high school exit grade was the lowest of all twenty students, 78.6% (Appendix P), and his relatively high TOEFL score (530), which was not reflected in his written work, was most likely a composite score. His grades for the three written assignments varied between 69% and
74% (Appendix P), indicating that he had weak writing strategies at the start. The strategies only developed slightly during the ten week data collection period. However, superficially he had the general learning strategies of the successful students (Appendix U). As proof, he wrote in the reflective writing assignment (see Appendix H for prompt) that

*My participation in the classes is very good by I listen to the instructor, ask question and do all what make me active in the classes. (Samir)*

Like the two successful students, Samir had attended a public school (Appendix O). He was also the only student among the non-successful students who used the English language option in WORD. His *study skills* improved slightly across the three assignments, but he had many problems in *academic socialization* in all three assignments, only somewhat following assignment and submission guidelines (Appendices R and T). The sample for Assignment 1 (Appendix C) was written by him. The development of Samir’s academic literacy skills is more similar to that of the students at the tail end of the group of average students than to the subgroup he belonged to, which is not surprising as he was the best of the non-successful students (Appendices P and T). It also reveals the problem of cut-off levels, as in another cohort of students his writing might have been more representative of an average student.
5.2.3.4 Sultan, the quiet student with poor attendance

Sultan was an academically weak student with poor English language skills who was misplaced in starting his studies in an engineering HEI at the time. The reason for the placement was most likely his relatively good high school exit grade (87.8%) from a public school, but his TOEFL score (500) was the lowest possible for entering the HEI (Appendix P). He admitted that he had taken extra English language lessons (Appendix O), but his English language skills remained weak. He was quiet in class when he attended (Appendix U, classroom observation. Due to submitting Assignment 1 one week after the agreed deadline (Appendix K), he lost several marks (Appendix A) and got the very low grade of 33.1% (Appendix P). Sultan’s error ratio was the highest among all twenty students in the main case study at 9.1 for Assignment 1 (Appendix Q), indicating poor study skills. Moreover, he had not understood the purpose of most of the assignments and had only slightly followed the submission guidelines (Appendix R). There were no in-text citations in any of his assignments and none of the three references he used were academic journal articles (Appendix R), indicating weak academic socialization. The errors in the literature review of the final research report (Assignment 3) were the same ones he had had in Assignments 1 and 2, revealing that he had not responded to any instructor feedback, as the following extract from the literature review (included in Assignments 1 and 2) of Assignment 3 shows.

There are things that let time management very important. First of thing, there should be goals set up, so the student who want to do his work knows what to do
and how to figure it out. Second thing is set a daily plan; therefore students could manage the time without wasting it and list the important things. (Sultan)

It is to be noted that the idea of having ‘goals’ and ‘a daily plan’ in the extract above has clearly been taken from some source which has not been referenced, and he did not even attempted to write a list of references according to IEEE guidelines. Instead, his list of references for all three assignments was a list of web links, showing again that he had not reacted to instructor comments on following the required IEEE guidelines from Assignment 1 onwards. It seems that Sultan did not consider these aspects of academic socialization particularly important, or perhaps because he was absent so frequently from class (Appendix K), he did not learn about their relevance. He admitted in his reflective writing assignment (Appendix W) that his attendance had been poor. Sultan must have struggled in other subjects too, as his GPA at the end of the academic year was a mere 64% (Appendix P) and he subsequently withdrew from the HEI altogether. Making no attempt whatsoever to develop his writing, research or general learning strategies, he differed from all the other students, including the ones in the subgroup he was designated to in the current study. I will now present and analyze the findings related to the successful and non-successful students’ approaches to completing written assignments.

5.3 Approaches to completing written assignments

Data from Surveys 1, 2 and 3, instructor observations, classroom observations, semi-structured interviews and a reflective writing assignment were gathered to answer
Research Question 3: What are the differences, if any, in the ways that successful and non-successful students apply themselves to completing written assignments? The findings related to Research 3 are presented and analyzed below. Then deeper insights are obtained from further findings regarding the portrayals of the approaches adopted by the four students in the second case study, Ahmed, Amer, Samir and Sultan.

5.3.1 Findings revealed from classroom observations

The main difference between the successful and non-successful students’ approaches to completing assignments seems to stem from the way they paid attention in class and the amount of time they were prepared to spend on completing the assignments, in other words, their general learning strategies. Collated findings from the classroom observations on 20 lessons using an adaptation of the MOLT observation scheme (Appendix U) revealed a huge gap between levels of participation in class among successful and non-successful students, as shown below in Table 11.
Table 11

*Collated findings from classroom observations*

<table>
<thead>
<tr>
<th>MOLT criteria</th>
<th>Attention (frequency)</th>
<th>Participation (frequency)</th>
<th>Volunteering for teacher-fronted activity (frequency)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subgroup frequency for successful students</td>
<td>55%</td>
<td>60%</td>
<td>68%</td>
</tr>
<tr>
<td>Subgroup frequency for non-successful students</td>
<td>17.5%</td>
<td>0.85%</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

The difference in the students’ levels of involvement in class is very evident from Table 11. It is also disconcerting because especially non-successful students tend to rely on instructor advice in class for doing assignments instead of reading any available guidelines, but Table 11 indicates clearly that they did not actually pay much attention in class. Further classroom observations which I gathered from the iterative viewing of the video recordings of lessons confirm the differences in the behaviors of the two subgroups of students in that while most of the successful students asked questions in class and responded to instructor questions, apart from Samir, none of the non-successful students did so. In contrast, the other non-successful students had a very passive demeanor during most of the lessons recorded, as the figures in Table 11 clearly show. Students at school may express disengagement by behaving disruptively, but the non-successful students in the current study either reverted to attending classes passively or they stay away from lessons altogether.
Classroom observations also revealed that successful students read assignment and submission guidelines in advance and were aware of the standards set in the course grading rubric, in other words, they knew what was required of them, judging by the types of questions they asked when a new assignment was explained in class. Based on both classroom observations and the analyses of the written assignments, most of the non-successful students did not. The approaches of the successful students showed that they had assumed ownership of their learning by familiarizing themselves with the written course material (classroom observation), and most of them showed their assignments to the instructor in advance for extra feedback prior to submitting the assignments, indicating good general learning strategies, while most of the successful students did not (Appendix K). It could be that the non-successful students felt that they had benefitted from listening to the answers to the successful students’ questions, or that they did not know enough to understand what the questions were about. Perhaps they were shy to ask for assistance, or in continuing to study in the way they were used to at school, they were not aware of the higher demands imposed on their ability to acquire new knowledge and skills in HE. It seemed that they faced one of the main challenges in HE which is that students need to learn to understand whether they have learned the required amount about a subject at any given time during their studies, and that they are personally responsible for the extent of their knowledge and skills. Moreover, they did not seem to understand the amount of effort required to complete assignments in HE, indicating poor general learning strategies.
5.3.2 Findings revealed from instructor observations

Instructor observations (Appendix K) showed that none of the successful students were absent frequently in contrast to two thirds of the non-successful students, so the latter group of students could not have been aware of all the course requirements. Neither of the two subgroups of students consulted the instructor outside class time about the assignments, but most of the successful students took advantage of extra feedback prior to submitting their assignments by showing them in advance to the instructor, whereas only one of the non-successful students did so. It would have required completing the assignment well before its deadline, which the successful students did. Instructor observations also showed that they managed to submit the assignments well before the deadline, whereas the non-successful students did not. These differences in the ways the two subgroups approached completing assignments show the importance of organizational and time management skills regarding approaches to assignments in HE.

5.3.3 Findings revealed from Surveys 1 and 2

Both subgroups of students perceived themselves as relatively good learners at the start of the course according to their self-evaluations in Survey 1 (Appendix O). This was true regarding the successful students, but contradicts the results revealed by the analyses of the written assignments of the non-successful students and the grades they received for the assignments, showing that their perceptions were not accurate. Their false perceptions are confirmed by the findings from Survey 2 (Appendix X) collected at the end of the
course which show that over 90% of the students felt that their writing skills had improved quite a lot or a lot during the academic literacy skills course, although the non-successful students’ ones had not (Appendices S and T). The discrepancy between reality and the non-successful students’ perceptions is most likely due to a lack of understanding of the academic literacy skills course requirements (Appendix A) and the way in which the assignments are graded (Appendix I) resulting in the students being underprepared to approach the completion of the assignments.

According to further findings from Survey 2 (Appendix X), most students also felt that they had worked harder and done more independent work on the academic literacy skills course than on other courses. While this may be true, the amount of work the non-successful students were prepared to do for the assignments was not enough to bring them to the standard of meeting the course expectations (Appendix I). This is confirmed by the findings from Survey 1 (Appendix O) which show that all the successful students bar one spent over an hour on homework daily when they were at school, whereas non-successful students spent a maximum of 30 minutes on homework or only studied for exams. The latter is not a long enough time to complete the kind of demanding homework assignments required in HE. The problem is, as Murtagh (2010) pointed out, that some students, such as the non-successful students in the current study, do not understand that it is not enough to do homework in an HEI like they did at school, because they also need to set aside time to study outside classes in order to be able to gain the amount of knowledge and the kinds of skills required in HE. Moreover, many of the students lived in dorms, residing for the first
time away from home and parental control, so they may have been lacking in organization skills related to the ways in which they spent time outside class time or lectures. If students do not learn to allocate enough time for completing assignments in HE, they will not be able to complete them to the required standard, which seems to be the case of the non-successful students. The finding shows that the non-successful students needed help in improving their general learning strategies HE, because it was what mainly accounted for the lack of development in their writing strategies and research strategies.

5.3.4 Insights into the ways in students apply themselves to completing assignments from the findings from the second case study

Collated findings from the observational data, semi-structured interviews and reflective writing assignments of the four students in the second case study (Appendix L) were included to enrich the portrayal of the ways in which students approached completing assignments. The approaches of each student in the second case study are provided below.

5.3.4.1 A good start from school and doing the right things in HE results in high grades

Ahmed’s written work was of a high standard right from the start of the data collection period, showing that he had already acquired successful approaches to completing written assignments prior to entering HE. His rate of attendance was high and he was very alert during class, asking many questions when the assignments were explained (Appendix U, classroom observations), revealing that he had studied the assignment and submission guidelines prior to coming to class. He spent a lot of time
doing his homework (Appendix V), a necessity in HE compared to school which many first year students fail to understand (Murtagh, 2010). His good English language skills (Appendix P) meant that he understood everything that he was told and what he read, resulting in the submission of assignments that were predominantly correct down to the finest detail (Appendix T). An extract from his reflective writing assignment confirms his meticulous approach to studies in HE, and that in spite of that, he also had time to assist other students.

Since I attended this course, I paid attention a lot. Listening and asking questions are things that I’ve always done in classes to get more details about the tasks…Helping friends is also what I usually did when they asked me. (Ahmed)

Further findings from the semi-structured interviews (Appendix W) showed that he had doubled the amount of time he spent studying by week 5 when the interviews took place compared to the start of the course (Appendix O), indicating he had taken ownership and responsibility for his studies and that he had good time management skills. This was confirmed by findings from the semi-structured interview (Appendix V), which showed that he took being a full-time student very seriously, checking the deadlines for assignments, reading and practicing. He had acquired all the general learning strategies to make himself an academically successful person.
5.3.4.2 Good English language skills help a lot when one is easily distracted

Amer’s written assignments were more similar to those of the average students although he ranked as a successful student by the end of the course. As mentioned earlier and verified by classroom observations, Amer was easily distracted in class. The observational data also revealed that he spent a lot of time in class chatting to other students or fiddling with his mobile phone or cap. His attention frequency was the lowest along with Abdelaziz’s in the subgroup of successful students, as was his participation frequency and signs of volunteering for teacher fronted activities, the latter being lower than that of Samir (Appendix U). The findings from his semi-structured interview showed that he had a fairly casual approach to completing assignments and that he had not changed his study habits since school, confident that his good memory and good oral skills in English (Appendix V) would assist him in being able to do his assignments well (classroom observation). He said in the interview that he did not make any plans for doing the assignments (Appendix V), but the change of heart he had about his attitude towards his studies was expressed in the following extract from his reflective writing assignment.

Before this course I didn’t take studying English seriously and this is why I didn’t get a high grade at first, but throughout the course this attitude changed and I began to work harder and gave English the credit it deserves. (Amer)

His comment may have been made to seek to please the instructor. However, it seems that he was disappointed in his initial low grades and decided to improve them by honing his approaches to written assignments.
5.3.4.3 Good study habits do not compensate for weak English language skills

Despite the non-existent development of Samir’s writing skills during the data collection period, of all the 20 students in the current case study, Samir was the most active at contacting the instructor outside classes to ask for further clarification about the assignments (Appendix K). He confirmed this in his reflective writing assignment saying that “I have visited the instructor and email her several times for questions”. However, he also had other priorities as he continued by writing that “I do my communication homework on time except when I have something stopping me”. Classroom observations (Appendix U) showed that his attention span and his will to volunteer for teacher-fronted activities were similar to that of the successful students, indicating that he was eager to learn more. However, the analyses of his Assignments 1, 2 and 3 showed that he was hindered by his weak English language skills despite the relatively high TOEFL score (530) which he provided for Survey 1 (Appendix O). Anecdotal evidence tells that TOEFL certificates could be bought in the UAE and the price varied depending on whether one actually wanted someone to take the exam on one’s behalf or whether one settled for a forged certificate. Due to his low high school exit score, it could be that Samir had obtained such a certificate to ensure his entry into the HEI where the study took place. Nevertheless, although his approaches to completing assignments seemed to be correct, the quality of the writing he produced did not meet the expectations of the course requirements, indicating that he struggled with writing and research strategies.
5.3.4.4 Poor attendance and a passive demeanor hinder development

The approaches that Sultan had adopted led to his written assignments being of a lower standard than that of all the other students. He was absent a lot (Appendix O), which also showed in the extremely low findings regarding his participation in class (Appendix U). Findings from classroom observations (Appendix U) revealed that he paid very little attention even when he did attend the lessons, mainly demonstrating a passive demeanor. Based on the very short answers he provided in the semi-structured interview (Appendix W) it was evident that his study habits had not changed from his school days and that he only really focused on studying for exams as he had done at the beginning of the course (Appendix O). His reflective writing assignment is in Appendix X and he stated in it that

*I heard from students that this course is hard and need too much work, but it’s not hard and only we should work hard.* (Sultan)

He also said in the same assignment that

*I am working hard to finish my homework on time.* (Sultan)

However, there seems to be a big discrepancy between Sultan’s idea of hard work and the expectations imposed on him in HE. He handed in Assignment 1 one week late and never asked for assistance outside class (Appendix K). It seems that his poor English language skills (TOEFL score 500) and poor attendance made it impossible for him to pursue his studies in other subjects as well, as he dropped out of the HEI at the end of the first year.
5.4 A discussion of the findings related to Research Questions 1, 2 and 3

The analyses of the findings related to the three research questions revealed several indicators affecting the development of students’ academic literacy skills. The importance of identifying these indicators cannot be undermined as a means of assisting students in improving their academic literacy skills. Most students are not familiar with the discourse communities of HE (Wingate & Tribble, 2012), so they need to acquire the necessary academic literacy skills to allow them entry into their respective disciplines and to become academically socialized (Russell, et al., 2009).

5.4.1 Entry level indicators affecting the development of academic literacy skills

On entry into an English-medium HE, the two main indicators are unsurprisingly students’ high school exit grades and their level of proficiency in the English language, which in this case was determined by their TOEFL scores. With the exception of one non-successful student in the main case, the findings presented in Appendix P confirm the results of several previous studies according to which high school grades are highly indicative of success in HE (Kuh et al., 2006; Gibbs, 2010; College Success Factors Index, 2010), both for native speakers and non-native speakers (NNSs) of English, as most students with high grades from school transfer their good learning habits to HE. However, not all students learn good study habits at high school, as the findings from the analyses of the students’ written work, classroom and instructor observations revealed, so instructors in HEIs
cannot assume that all in-coming students come equipped with the necessary study habits from school (Russell et al., 2009; Skinner & Mort, 2009).

As long as English-medium HEIs include results from language test such as IELTS and TOEFL in prerequisites for entry into HE, regardless of whether such tests are highly predictive of academic success or not (Rosenfeld, Oltman and Sheppard, 2004), the scores must be taken into consideration. The average TOEFL scores of both the average and successful students in the current study were above 520, indicating that perhaps a score of 500, the prerequisite in the HEI where the data were gathered, is not enough for students to succeed on an academic literacy skills course, or perhaps even in their studies in an English-medium engineering HEI. This has already been recognized in HEIs in English-speaking countries, as the minimum TOEFL score required for studying engineering, for example, at the University of Texas (USA) is 550, and at the University of Edinburgh (UK) it is 580. Good language skills assist in developing academic literacy skills and are vital for students to grasp content area subjects in HE, as students’ knowledge is frequently tested by written assignments (Clughen & Connell, 2012). Allowing students entry into HE with inferior English language skills not only disadvantages them in HE, but may also prolong their studies or even hinder them from eventually graduating with the knowledge and skills required of them in their further studies or in a future workplace.
5.4.2 Indicators affecting the development of students’ study skills

Incoming students to HE may be lacking in the kinds of writing skills they need to demonstrate their knowledge and skills in HE (Rees & Wilkinson; Skinner & Mort, 2009; Wingate & Tribble, 2012). The findings related to Research Question 1 regarding students’ study skills as they are understood in the ACLITS framework revealed that all the students had problems with study skills at the start of the course, but successful students overcame them by the second assignment written in Week 5 and average students by the third assignment written in week 10. Non-successful students only improved very slightly in this area across all three assignments.

5.4.2.1 Engineering students’ disdain for developing written communication skills

While errors in study skills may seem minor as they seldom interfere with comprehension, the need for engineering students to write accurately and concisely is very important (Martinez et al., 2011), as they need to be able to communicate in such a way in the workplace (Riemer, 2007). Many engineering students do not realize this (Rees & Wilkinson, 2008; Skinner & Mort, 2009). The use of a casual writing style, similar to writing in English at school (Woods & Skrebels, 2011) and to the way the students spoke English, could also be accounted for by the fact that the students all studied engineering students and such students sometimes consider writing a low priority (Drury, Airey & O’Carroll, 2010), preferring to focus on more mathematical subjects.
5.4.2.2 **L1 interference**

Some of the errors in *study skills* may have stemmed from L1 interference, which is likely as all the students were Arabs and they were studying in a Gulf Arab country, so their exposure to the English language may have been limited to the HEI’s campus area. Especially the students with weak English language skills may have resorted to L1 in order to be able to express themselves in writing, as was evident from the seemingly random use of articles, a common error in Arab students’ written English (Compton, 2011).

5.4.2.3 **Limited ability to apply digital literacy skills**

Another issue related to L1 was that the students frequently resorted to digital aids (laptops, mobile phones) for immediate help in spelling and grammar matters, but lacking instruction in ways to use the devices to improve their academic literacy skills, they may not have been able to utilize the devices very beneficially. Moreover, many of the students did not adjust their computers to the English language setting because they were not aware of the setting or not able to do so, thus being unable to benefit from the spellchecker feature in Microsoft Word. Some students also struggled to follow the required submission guidelines being unaware of the layout settings provided in Microsoft Word. Secker and Coonan (2011) advocate involving librarians in the instruction of information literacy skills (including academic literacy skills), but in practice this can result in a one hour bolt-on session which may or may not be useful for the students (Wingate, 2006).
5.4.2.2 Lacking in proofreading skills and unwilling to benefit from feedback

A major difference between the successful students in the current study and the other students was that, based on the quality of their writing and the way their academic literacy skills developed, they proofread assignments, asked for extra feedback from the instructor and meticulously responded to all instructor feedback comments in their assignments. The fact that the other students rarely proofread their assignments prior to submitting them resulted in high error ratios for some students and it was a surprising finding. Perhaps they did not have the skill to do so and guidance in proofreading was not included in the academic literacy skills course they attended. They may not have seen the merit of using writing as a tool for learning (Russell, 2013), considering it a mere necessity alongside the other more mathematical subjects they studied. This is a view shared by many engineering instructors, too (Cilliers, 2012).

They could also have benefitted from the spellchecker feature in Microsoft Word, another digital literacy matter, help from the HEI’s Writing Center, or at least from the feedback they got for each assignment from the instructor. Some students actually ignored the instructor feedback, although such feedback is considered to be central to the development of student writing (Littlejohn, 2001). It could be that they experienced “a sense of loss regarding their writing” (Woods & Skrebels, 2011, p. 42), because of the kinds of issues that were perceived by the instructor as errors, not understanding how to correct them. The development of academic literacy skills “entails cumulative, hierarchical
processes” (August & Shanahan, 2006, p. 5), which means that students need to make an effort to understand the areas which they need to improve in order to progress. However, it seems that perhaps some of them felt that as the level of their English language skills allowed them entry into an English-medium HE, there was no further need to develop these skills after that, showing a lack of consideration for the academic literacy skills required to enter the academic discipline they aspired to become members of (Coffin et al., 2002; Leki, 2007).

### 5.4.3 Indicators affecting the development of students’ academic socialization

*Academic socialization* encompasses the notion of *study skills* and focuses on ways in which students engage in their studies to be able to improve themselves (Lea & Street, 2006; Lillis & Scott, 2007; Wingate, Andon & Cogo, 2011; Armstrong, Dannatt & Evans, 2012), and deals with matters regarding the students’ sense of responsibility and ownership towards their studies, the discipline they are studying in and the HEI itself as well as the effort they are prepared to put into developing themselves in HE (Lea & Street, 1998). The indicators affecting the development of students’ *academic socialization* based on the findings of the current study are discussed below.

#### 5.4.3.1 Poor library research strategies are evidence of poor information literacy skills

One of the three strategies identified by Bury Sheese and Katz (2013) as pertaining to academic literacy skills is research strategies, or more specifically, library research
strategies, including searching for and utilizing sources. Much time is spent nowadays searching for information on the internet, but much time is wasted when one’s library research strategies are not good. A variety of skills such as good critical thinking, organization and planning skills assist learning in HE (Secker & Coonan, 2011) and they are necessary for the development of study skills and academic socialization as they are understood in the context of the current study. These skills are required at different stages of doing research (Hall & Navarro, 2011) along with good reading skills.

Many of the students struggled to find relevant academic journal articles for their research projects despite having attended a one hour library session on using databases, indicating a need for further tuition in this area. Using in-text citations and compiling a list of references also seemed to be problematic for almost all the students, similarly to the results in the study done by Armstrong, Dannatt & Evans (2012) on improving electrical engineering students’ academic literacy skills, including referencing skills. Such issues are due to a lack of knowledge and understanding of the use of a citation system, ignorance of plagiarism issues and a lack of awareness of the link between reading and writing which is important for the development of academic literacy skills (Lea & Street, 1998; Wingate, 2006; Lillis & Scott, 2007; Hall & Navarro, 2011). Only half of the students chose academic journal articles as sources and the rest chose generic websites, which showed a lack in the necessary information literacy skills required for conducting research, which is
apparently a common issue in HEIs (Zabel, 2004; Hassel & Giordano, 2009; Hill, Macheak & Siegel, 2013).

5.4.3.2 Academic integration and ownership

The successful students and the best average students found out early on in the current study about grading rubrics, submission and assignment guidelines. The latter two were included in the current study as criteria for academic socialization along with the citation and referencing discussed above. In doing so, the students demonstrated an interest in the course content and in what was expected of them. It showed that the students had accepted that they were a part of the course and a part of the HEI they were studying in, and that they wanted to actively participate in their learning experience both inside and outside the classroom. They also turned to the HEI’s Writing Center for help, indicating the ability to utilize the support systems supplied by the HEI. It was disconcerting that almost half of the average students and ¾ of the non-successful students in the main case study did not make a conscious attempt to become academically integrated or to take ownership of their studies, indicating a lack of responsibility for their academic success (Kuh et al., 2006) and moving the onus onto the instructors, perhaps relying on the instructors to assist them in the ways that teachers at school had done. The importance of these traits is evident, as in two previous studies also done in the Arabian Gulf region the authors advocate that HEIs should provide students with a feeling of inclusiveness (Picard,
and that HEIs should facilitate students in achieving a strong identity in the communities of practice that they aspire to belong to (Howell, 2008).

5.3.4.4 The advantages of project-based and problem-based learning

It seems that working on a research project gave the good students and half of the average students a sense of ownership, a further indicator connected to academic socialization (Lea & Street, 1998, 2006). Additionally, being able to report on what they were going to do (Assignment 2) and what they actually did (Assignment 3) in their research projects gave them the sense of empowerment often brought up in the context of the ACLITS framework (Gee, 1991; Street, 1997, 2003), making them understand the effect of the effort that they were prepared to invest towards learning and academic achievement better (Lea & Street, 1998; Barkley, 2009). Project based learning and problem based courses, similar to the academic literacy skills course in the current study, provide ideal contexts for improving critical thinking, language and research skills (Pepperdine, 2010). They are also approaches advocated for teaching engineering students in general (Graham & Crawley, 2010). Revising project documents requires that students need to edit and rework their written assignments, giving them opportunities to redraft and improve their written work. However, problems can arise if students do not benefit from such opportunities.
5.4.4 Indicators revealed by findings on the students’ approaches to completing assignments

Adopting the approaches of successful students and avoiding the approaches of non-successful students should provide the ingredients for successful approaches to completing assignments and thus help students to develop their academic literacy skills. The main indicators that seemed to support development were good general learning strategies and language skills from school which were discussed earlier. There is also a need for HEI’s to provide support for students lacking in these skills. Furthermore, many students experience living away from home in their first year in HE for the first time and may have issues with organizational matter and time management. While this is not strictly speaking an academic issue, it is part of the students’ social integration into HE (Kuh et al., 2006), and they should receive support from their HEI on these matters.

Ownership of and responsibility for one’s success are part of academic integration (Kuh et al., 2006) and they are important indicators of development which students who continue their studies in HE in a school mode fail to understand (Murtagh, 2010). It may also be the reason for the false perceptions that the weak average students and non-successful students regarding the amount of effort and time which they felt they had invested in approaching and doing the assignments as being sufficient to achieve a medium or high grade. Many studies have shown a mismatch in instructor and student perceptions regarding the development of academic literacy skills (Lea & Street, 1998; Dunn, 2002; Hall & Navarro, 2011), and more are needed to close this gap. It seems to also call for
increased interactions between instructors and students in HE (Bazerman, Bonini & Figueiredo, 2009), and for instructors to treat students as apprentices to the culture of HE (Russell et al, 2009). Students would benefit from this as they could in this way begin to gain the intellectual agility (Secker & Coonan, 2011) provided by their ability to develop their academic literacy skills, in other words, their writing strategies, library research strategies and general learning strategies (Bury, Sheese & Katz, 2013).

5.4.5 Utilizing the findings in the current study

Having described the development of the academic literacy skills of a cohort of 20 first year engineering students and compared the indicators affecting this development, it is obvious that there are implications both at a theoretical and at a practical level. These implications are discussed in the following chapter.
Chapter 6: Conclusion

In this chapter I will present how the current research might impact the practice of teaching academic literacy skills in an engineering HEI as well as how this could possibly be applied more broadly. In addition new areas of research generated from the current study are discussed. Furthermore, possible limitations of the study are explained and the concluding section ends with a statement of the key message, and a short reflection of the knowledge and skills I have gained in completing this research study.

6.1 The impact of the current research on teaching academic literacy skills

The conundrum is that the variety of skills that students need to become competent in academic literacy skills does not pertain to any particular academic field, so it is not only unclear how the skills should be taught but also who should be involved in teaching them. Findings from the current study show that, in an engineering HEI, one of the main dilemmas is actually due to the epistemological differences between academic literacy skills and disciplinary knowledge. This is reflected not only in the way that instructors view knowledge but also how students who have sought to study a particular discipline tend to understand knowledge, which is why further studies in that discipline have appealed to them in the first place. It is not a coincidence that the development of theories and practices related to academic literacy skills as they are now known started with the introduction of freshman composition courses some 100 years ago in the Humanities discipline. However, for students in other disciplines to understand the necessity of
developing academic literacy skills, the skills need to be integrated or embedded into instruction by relating them to disciplinary epistemologies. Recently several successful attempts have been made to introduce academic literacy skills into various other disciplines in many English speaking countries, as shown in studies done by Wingate, Andon and Cogo (2011) in the UK, Chanock et al. (2012) in Australia and Bury, Sheese and Katz (2013) in Canada only to mention a few. However, the conclusion arrived at in all these studies is that while experimental models are well-received in the communities of HEIs, the subsequent application of such models does not occur, or at least not to the extent that was hoped by the people who designed the models. Moreover, the disciplinary faculties do not buy into such models in the long term. It seems that, based on the findings in the current study, this is because of basic epistemological differences. Therefore, the recommendation arising from the findings of the current study is to teach academic literacy skills in terms of disciplinary knowledge. This would mean that such skills could be taught by any instructors who have an understanding of the ways in which people within a discipline think and reason, in other words, of the underlying epistemology of the discipline. It could be that it would result in fruitful exchange of knowledge among faculty and the buy-in to continue the development students’ academic literacy skills throughout their studies in HE.
6.1.1 Understanding academic literacy skills through the disciplinary thinking of engineering

I will attempt now to explain how academic literacy skills could be understood using engineering ways of thinking. Engineers analyze entities or objects as having a function and comprising the components they are made of. Each component is of a specific shape and size and it has a specific function, as anybody who has looked at an instruction manual, which are written by people in the engineering profession, knows. In order to understand how the entity or the object works, the functions of each component are broken down into the smallest possible units, so that no ground is left uncovered. An example of this in terms of academic literacy skills are the indicators affecting its development identified in the current study, including study skills such as punctuation and spelling and features of academic socialization such as following assignment guidelines and using a required citation system correctly. Most objects are improved by enhancing the functions of the various components or by adding to the components to make the original function more versatile, such as including a camera in the functions of a mobile phone. By enhancing the students’ ability to use the aforementioned functions, their academic literacy skills can be improved, and by adding these functions to the disciplinary subjects in an engineering HEI, students’ overall performance can be improved and, similarly to the way the addition of a camera enhances the functions of a mobile phone, the students’ performance can become more versatile by including the development of academic literacy skills in disciplinary knowledge.
The function of academic literacy skills within HE is for students to be able to demonstrate what they know more about as their studies progress. From a pedagogical point of view, it could be defined as the students’ ability to acquire, internalize and articulate this knowledge. Continuing with the analogy of engineering disciplinary thinking, it is then necessary to understand the function of each of these parts. Acquiring knowledge means having the necessary skills to do so, in other words research strategies including information literacy skills, general learning strategies (Bury, Shees & Katz, 2013) and, due to the amount of knowledge easily available by utilizing various electronic devices, digital literacy skills (Secker & Coonan, 2011). Internalizing knowledge requires metacognitive skills such as learning, knowing, the ability to apply knowledge and the ability to evaluate the extent and quality of the knowledge acquired, in pedagogical terms it means developing general learning strategies, information literacy skills in general and specifically critical thinking skills. Articulating knowledge means having the ability to tell others either in writing or orally what this knowledge is, bearing in mind the needs and the knowledge level of the recipient of this knowledge, in other words, the context within which the knowledge or information is provided (Lea & Street, 1998, 2006). This entails learning and writing strategies, oral skills, possibly graphics skills, certainly in an engineering context, as well as digital literacy skills, if, for example, the knowledge is conveyed using a power point presentation or a Computer Aided Design (CAD) program, or even an email attachment.
As the current study and prior studies show, problem-based and project-based learning have proved to be successful pedagogical methods in engineering HEIs, because they are the way that people in this discipline produce knowledge both in HE and in the workplace, especially if the learning is done in teams, which is true of the workplace but not so much of instructors in HE. Basically the methods are successful because they enhance disciplinary thinking. However, the shortcoming of many attempts to integrate or embed academic literacy skills into disciplinary knowledge stop at this stage. The actual content provided for the students is frequently delivered in terms of Humanities disciplinary knowledge. This is the point at which most of the breakdown occurs from the point of view of persuading engineering faculty and students that academic literacy skills are a necessary means for students to be able to acquire, internalize and articulate knowledge. However, by basing the instruction of academic literacy skills on the epistemologies of the engineering disciplines right down to the smallest possible component and making all faculty aware of the significance of these components to the performance and versatility of the students’ knowledge and skills, there should be no problem in convincing engineering faculty of the importance of embedding academic literacy skills into engineering subjects. Moreover, by discussing disciplinary epistemologies with engineering colleagues and working engineers, faculty members with a Humanities background should also be able to assist first year engineering students in developing their academic literacy skills while simultaneously inculcating them into the disciplinary thinking of engineering.
6.2 Areas of further study

The principle areas of further study arising from the current study are the ways in which faculty from one discipline can be assisted in understanding the underlying thinking in another discipline, whether it is at an epistemological level or at a level of the practical outcomes reflected by a particular epistemology. More research is needed to find out about further components affecting students’ academic literacy skills in engineering HEIs as well as in, for example, business schools and colleges of further education. I want to emphasize that this does not mean looking at these issues metaphorically or from the point of view of, for example, ESP or EAP but genuinely from the point of view of disciplinary thinking, as was attempted above in the context of the discipline of engineering.

Regarding the components comprising academic literacy skills and their functions, the focus in the current study was predominantly on indicators affecting students’ writing strategies and general learning strategies. Evidence of students’ research strategies was shown in conjunction to academic socialization, but more analyses is needed of the function of these ‘components’ and it is very likely possible to break down these components to smaller functional units so that they can be more easily embedded into the teaching of other kinds of subject matters. In addition, ways of instilling ownership of learning need to be investigated, as especially the non-successful students and weaker average students lacked in this, as shown by the findings in the current study.
6.3 Limitations of the study

Despite the amount of time and attention to detail that a study like the current one requires, there are still always some limitations. The limitations in this study include the lack of interviews of instructors of academic literacy skills and in the engineering disciplines. Moreover, it is not only the context of the students in HEI which should be considered, but also that of their family background and its effect on their academic literacy skills (see Hatherley-Greene, 2012). Very little was included regarding students’ perceptions of their own learning abilities in HE, and it would have been useful to investigate this area as it was evident that some the students’ perceptions were not particularly realistic. Moreover, in view of the students’ GPA, the actual relationship between the types of academic literacy skills developed on the course and their relationship to the other more mathematical subjects which their students were studying at the same time could have been considered by including instructor interviews on all the subjects. A further limitation was that as the focus was on the analyses of students’ written work, there was no data on their reading skills or critical thinking skills which are crucial elements of academic literacy skills (Bury, Sheese & Katz, 2013) and academic socialization (Lea & Street, 1998, 2000, 2006), as discussed above.

Regarding other data collection methods, more in-depth interviews with all students, perhaps in the form of focus groups could have provided more data on their approaches to writing. In addition, a more detailed coding of the classroom observations
might have provided more details about the students’ study habits and the ways in which they applied themselves to completing tasks. Some of the limitations mentioned were outside the scope of this study and some were excluded due to restrictions in time. However, the limitations identified could also be used as bases for further research.

6.4 The key message derived from the findings of the current study

It has come as a surprise to me how little knowledge faculty in HEs seem to have of the disciplinary epistemologies of disciplines other than their own, and I have come to an understanding that this is an area of research which has been hugely overlooked both from a pedagogical as well as a philosophical point of view. Moreover, the implications of such research on the ways in which knowledge is transferred in HEIs or, for example from workplaces, such as engineering companies or businesses to HEIs, is huge from a developmental point of view. Investigation into basing the instruction of academic literacy skills on the epistemologies of various disciplines in HE could pave the way to other applications of the acquired knowledge.

6.5 Reflections

To arrive this far on the road to completing the current study is an exhilarating feeling, although it was a long road filled with trials and tribulations. Doing the current study has deepened and strengthened my understanding of academic literacy skills as a
researcher and the ways in which the different fields of research on language learning and academic literacy skills relate to each other. From a practical point of view I have learned on the one hand to handle large chunks of knowledge, and on the other hand to genuinely appreciate the amount of knowledge that can be acquired from detailed analyses of small amounts of data, the kind I typically dealt with in the two case studies included in the current study. Moreover, working on this research has provided me with a multitude of tools to enhance the development of students’ academic literacy skills as an instructor. Completing the study has provided me with a strong sense of maturity and I feel confident about pursuing further studies within the fields of academic literacy skills and the integration of disciplinary knowledge. The development of these skills is essential for any professional person wishing to succeed and to be able to confront the multitude of literacies, information and knowledge in the 21st century.
Appendices

Appendix A: Communication 1 syllabus - Fall semester 2009

1. Instructor

2. Class schedule 5 x 50mins lecture p/wk

3. Prerequisites TOEFL 500 + C grade Foundation

4. Bulletin Description

Communication 101 is designed to introduce students to the language and communication skills that are required for undergraduate study. Critical reading, critical writing and oral presentation skills are developed through a context of humanities & social science research projects which also aim to raise student awareness of quality time management skills and meta-cognition.

5. Textbook(s) and or other material required

Course notes, in-house materials, and selected readings are available on the website PI student intranet. There is no text-book for COMMS 101.

6. Course Objectives

• Formulate a research question

• Distinguish between quantitative and qualitative data

• Identify the variables in a research question and how these might be measured

• Construct and administer a simple survey

• Interpret data and make recommendations based upon the data

• Read and think critically

• Evaluate academic reading material

• Take notes and synthesize information from a variety of sources

• Analyze a problem and offer logical solutions to it

• Write academic reports and other project documents
• Work effectively in teams
• Evaluate self and peers
• Give Power-point presentations directed at a specific audience

7. Topics Covered
• The writing process
• Research questions
• Survey design and administration
• Interpretation of quantitative data
• Project proposals
• Recommendation reports
• Power-point presentations
• Project planning
• Time management
• The scientific method

8. Attendance Policy Students are expected to come to all classes and to be on time. Attendance will be recorded. Students must attend 90% of classes. Students who miss more than 10% of classes will be penalized at 1% per absence for their lack of contribution to the class, the team and the course.

9. Assignment Policy Deliverables are required and assessed weekly and incur penalties for lateness (5% per day) and presentation (10%) for non-standard format. See the course policy on submission guidelines:

10. Guidelines for Submission:
• White A4 paper.
• Page Numbers
• Black type
• Times New Roman Size 12 Font (normal)
• Sub-headings in bold size 12 font
• Stapled in the top left corner (NO plastic sleeves or folders)
• Left margin set at 1”
• Double spaced
• Cover sheet (Course Code, Course Name, Title of Report, Author, ID#, Date etc)
• Titles and figure numbers for tables and charts
• IEEE Referencing Style
• Bibliography
• Appendix (if required by instructor)
• E-mailed electronic attachment of all files you created for the assignment

Do not include any last minute ink or pencil corrections or pictures in your reports. Any presentation slides must go into the ‘Appendix’ section.

If you remain unsure, see your instructor for examples of final draft submissions.

Students will be penalized one full grade per assignment for not following these guidelines.

11. Plagiarism Policy

Plagiarism can result in failing the course or termination from the Institute. The Academic Integrity Policy is stated in *The Student Handbook*. Students are required to be cognizant with its contents and implications.

12. Grading Criteria

<table>
<thead>
<tr>
<th>Grade</th>
<th>GPA</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.00</td>
<td>95+</td>
</tr>
<tr>
<td>A-</td>
<td>3.75</td>
<td>90-94</td>
</tr>
<tr>
<td>B+</td>
<td>3.25</td>
<td>87-89</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
<td>84-86</td>
</tr>
<tr>
<td>B-</td>
<td>2.75</td>
<td>80-83</td>
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<tr>
<td>C+</td>
<td>2.25</td>
<td>77-79</td>
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<tr>
<td>C</td>
<td>2.00</td>
<td>74-76</td>
</tr>
<tr>
<td>C-</td>
<td>1.75</td>
<td>70-73</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
<td>60-69</td>
</tr>
<tr>
<td>F</td>
<td>0.0</td>
<td>0-59</td>
</tr>
</tbody>
</table>
13. Students at Risk Tutorials (STARTS) Performance on the course is assessed regularly and is aggregated at mid semester and at the end of the semester. Students scoring below 70% at mid semester will be considered as being at risk of failing and will be required to attend workshops/tutorials that will be arranged by the course instructor. Non-attendance of these tutorials will result in a lower Personal Development score and/or a one per cent (1%) reduction per absence.

14. Assessment & Deliverables in appendix C

15. Exam Protocol There is no mid-semester exam on the 101 course. For the final exam you will be given texts prior to the exam and allowed to bring notes on the texts to the exam. Students absent from the exam will only be allowed to do a ‘make-up’ if they have an excused absence.

IT IS THE STUDENTS’ RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH EXAM DETAILS INCLUDING DATE, TIME AND LOCATION

16. Schedule: n/a

17. Academic Integrity Policy: The Honor Pledge Reaffirmation below covers all individual assignments for the duration of the semester.

“I pledge that I have neither given nor received any unauthorized assistance whatsoever on this academic assignment, exercise, examination, project, presentation, report, etc.”.

Name/Signature ________________________ Student I.D. ______________________

Section ___________________________ Date __________________________

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Appendix B: Course assignments and assignment descriptions

Table 1.
Course assignments

<table>
<thead>
<tr>
<th>Week</th>
<th>Course content and assignment (value in % of the final grade)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

PROJECT 1

Week 1  Introduction to course and explanation of a research project

Week 2  Using sources in academic writing and IEEE referencing

Finding sources for the students’ own research projects

Week 3  Literature Review draft (10%)  ASSIGNMENT 1

Week 4  Introduction to quantitative methods used in academic research

Organizing project work in a schedule

Producing a proposal for a research project

Presenting information in writing and orally

Week 5  Proposal (5%)  ASSIGNMENT 2

Proposal Presentation (5%) in teams

Week 6  Designing a survey and testing it

Week 7  Distributing the survey and collecting the results

Week 8  Method and Results Draft (5%) in teams. This will be added eventually to the final report

Week 9  Analyzing results. Arriving at conclusions

Writing recommendations

Week 10 Final Report 10%  ASSIGNMENT 3

Final Presentation (10%) in teams
ASSIGNMENT DESCRIPTIONS:

ASSIGNMENT 1 LITERATURE REVIEW

Your task is first to make sure that you are familiar with all the sources so that you can identify significant themes.

Once planned and outlined the literature review should include:

- An introduction to your topic stating the issue (what it is, who it affects and how) an overview of the main research themes

- An explanation/summary of what the literature says about each of the themes you identified complete with relevant quotes and paraphrases.

- A concluding paragraph

An IEEE style reference list for your sources
ASSIGNMENT 2 PROPOSAL

DATE:
TO:
FROM:
SUBJECT:

INTRODUCTION (100 words)

In this part of the proposal, you provide the reader with some background information on the topic you will research. You must give reasons for your choice of topic and state why you believe you are suitable to undertake this task.

LITERATURE REVIEW (100 words)

The literature review can be sometimes difficult for new students to write. Nevertheless, you should attempt to show the reader that you can demonstrate your knowledge of the issues surrounding your research.

PURPOSE, SCOPE & FOCUS (30 words)

At this point you must state your purpose clearly and concisely. Eg. The specific purpose of this report is to determine/identify/prove etc. You should also state the parameters of your study-what you will and will not include.

METHOD (100 words)

The Method section provides a description of how exactly you will gather the data. You need to include details such as who will be surveyed as well as when and where the survey will be done.

DELIVERABLES

You should provide 2 sets of deliverables: 1. Course deliverables - the documents you give to your instructor for grading and feedback  2. Research deliverables. Probably in table or bullet format this section should state clearly what the research findings will provide. You should explain the benefits of each deliverable.

REFERENCES in IEEE format

SCHEDULE

Conclude your proposal by including your schedule for the weeks ahead. Use your Project Overview to help you. You will need to break down your project into smaller parts. For example, “doing a survey” involves defining your purpose, writing the survey questions, pre-testing the survey and gathering the data. Estimate how long each of these tasks will take before assigning them equally among team members. You will also need to set deadlines and anticipate what will happen if team members’ fail to meet them.
ASSIGNMENT 3 FINAL REPORT

This report is the culmination of your efforts. It is important that it is professional in appearance and includes the following assembled sections:

• Cover page
• Introduction (expand the Proposal intro)
• Literature review
• Research question, purpose and scope
• Methodology
• Results
• Analysis & Discussion
• Recommendations
• Conclusions

References
Appendix C: Sample Assignment 1

Literature Review

By: - XXXXX XXXXXXXXXX
ID: 1111
Course code: COM101
Instructor: XXXXXXXXXX XXXX
Date: September 13, 20XX
1 Literature Review

The variation of student’s academic performance can be caused by a lot of important factors. In this research we will discuss some of these factors that are supported by two [1, 2] articles. These articles negotiate the following factors: time management, study environment and distractions.

1.1 Time Management

Time management is one of the most powerful factors that affect student’s academic performance. According to [1] keeping a detailed calendar is a good step towards time management since it is almost impossible to remember everything by memorizing. As indicated in [1] there are some useful tools for that purpose such as a low tech desk calendar or a high-tech PDA.

Also [1] pointed at prioritizing and taking responsibility for time management. No one would manage your time if you don’t manage it yourself. After managing your time, you will feel more comfortable and you might have spare time to do fun activities.

1.2 Study Environment

Another important factor is the study environment. According to [2] studying on bed or in a
very comfortable position or place is wrong because your brain will function slower. Article [2] also shows that after asking students about studying in bed they react by laughing and saying that they usually fall asleep when they study on bed. Article [1] indicates to the difference of school environment and college environment. As a college student you'll need to take more responsibility about the deadlines and obligations. You will not receive constant reminders.

1.3 Distractions

There are a lot of things in our daily life that can distract us from doing what is important. As mentioned in [1], distractions cannot be 100% avoided in this world. The world that is full of text messaging, computer games and other distracting things that are hard for students to resist. Therefore, taking study breaks and using some time for enjoyment is a good thing.

Conclusion

After going through these factors we conclude that students should be aware of these factors especially because most of them are under the student's responsibility.

Therefore, student's responsibility becomes more and increases when moving from school to college. Thus, if they are able to handle these responsibilities, students will realize how much control they have on their academic achievements and performance.
References

[Accessed: September 12, 2009]

7ee790c377b6%40sessionmgr110&bdata=JnNpdGU9ZWRvclRvcC1QbG1ZS2F1V29vZ2Z1aXRl
[Accessed: September 12, 2009]

Grade: Annotations 8.4/10+lit review 72/90=80.4/100
Appendix D: Sample Assignment 2

Title: Proposal
Name: XXXXX XXXXX
ID: 1111111
Course: COMM 101
Instructors name: XXXXX XXXXX
Date: 1/10/20XX
1. Introduction

Some people think that studying in dorms is better than studying at home and enables the student to get a higher grade point average (GPA), and some people think the exact opposite, so, there is no other way to determine which place is better than to do a research. This proposal will discuss the advantages and disadvantages of both studying in dorms or at home, and how they are affecting the GPA. In this research, in order to get better and much reliable results, several students will be surveyed. I think that I am qualified for this research because I personally live at home while many of my friends and colleges live in dorms, so that helps a lot since we already live the research and have some personal experiences.

2.1 The advantages of studying at home

According to [1], studying at home has the advantages of saving money, peace and quiet, no roommates, safety and comfort. Studying at home helps saving money, since the student will not have to worry about dorm rooms rent or about food because residence and food will be provided. It also has the advantage of that it is peaceful and quiet. Hence, there will not be anyone to annoy the student, play loud music and stay up late when the student wants to sleep or to relax. When it comes to safety, homes are always much better because the student will not worry about somebody robbing him for example or starting a fire or any other harmful event. Comfort, since the student has his own room, bed and bathroom he will be comfortable.

2.2 The advantages of studying in dorms

According to [2] and [3] studying in dorms has the advantages of companionship, convenience, freedom, experience and the taste of life. About companionship, when living in dorms it is hard to feel lonely, there is always someone walking in the halls just ready for a friendly conversation, and seeing friendly faces is a very effective cure for homesickness. Secondly, about convenience, feel free to wake up 15 minutes earlier than the class, So, there is no need to worry about transportation, whether the streets are crowded or not and the student certainly will not have to worry about finding a parking space. When it comes to freedom, dorms are better than homes because there will not be any strict parents, annoying older brother, there is only the student, his manners and the
college's curfew. Also the taste of adult life, when the student is at home for example his mom does all the laundry and cleaning, but his mom is not there in the dorm with him so that is his job, and to concentrate on his studies and also to have time to manage keeping his room in good shape, that is so adult work.

2.3 The disadvantages of both studying in dorms or at home:

According to [1], [2] and [3] there are also some disadvantages in dorms and also at home.

First of all in dorms there is lack of privacy since there will be someone in the student's room and others in the same flat, there is also the disadvantage of noise, So, there will not be no peace and quiet like home. Having a roommate is not that easy also because there is a good chance that the student will not get along well with his roommate, Maybe the student hates smoking and his roommate is a smoker, Maybe the student likes to go to bed early but his roommate likes to stay up late and many other facts.

On the other hand living at home while studying in college has its own disadvantages such as that the student will not live the excitement of living with and knowing new people, and also the student will not have the taste of the adult life since his father or mother takes care of all that. There is also the disadvantage of worrying about transportation and getting to class on time. Also the emotional attachment, since the student never got out of his home, he will have a lot of difficulties when the time comes to get out.

2.4 The literature review's conclusion

The literature review indicated and explained some advantages and disadvantages of both living at home or in dorms while studying in college. Now at least most of those advantages and disadvantages are known, and the fact of the place that the student lives affect the GPA, That varies between students. The student gets a high GPA where he feels more comfortable. And more information will be revealed when the research goes deeper.
3. Purpose:

The specific purpose of this report is to determine how the study environment can affect the students' GPA and their academic performance. In addition, to determine what makes the study environment beneficial or disadvantageous for the college students.

4. Method:

There are several ways to collect information. The best way to gather data is by doing a survey. Therefore, we will survey about 20 students from the PL. Half of them live at home and the others live in hostel. My team consists of four members, two live at home and two live in hostel. The two team members who live at home will ask the students who live at home and the other team members who live in hostel will ask the students who live in hostel. The first two members will survey the students, living at home, when they are going to their homes in the bus on Monday and Tuesday. The other two members will survey the students, who live in hostel, by visiting them in their apartments on Monday and Tuesday after Al Esha prayers. The survey will include 10 – 15 questions and the questions will be open-ended, closed-ended, likert-scale, multiple-choice, ordinal, categorical and numerical. After collecting all data, we will put them in graphs, charts and schedule to analyze them.
5. Schedule:

The schedule below will demonstrate when the deadline for each job is, and what is required to be done.

<table>
<thead>
<tr>
<th>Writing a Proposal</th>
<th>September 27 – October 1st</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audience &amp; Purpose</td>
<td></td>
</tr>
<tr>
<td>Organization &amp; Content</td>
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<tr>
<td>Understanding Recommendation</td>
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<tr>
<td>Reports</td>
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<tr>
<td>Time Management, Tasks and Sub-tasks</td>
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<tr>
<td>Data Gathering Instruments</td>
<td>October 4 - 8</td>
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<tr>
<td>Quantitative Analysis</td>
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<tr>
<td>Variables</td>
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<tr>
<td>Data Collection</td>
<td>October 11 - 15</td>
</tr>
<tr>
<td>Describing the Method &amp; Results</td>
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</tr>
<tr>
<td>Describing process and data</td>
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<tr>
<td>Tables, charts, graphs</td>
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</tr>
<tr>
<td>Data Collection &amp; Collation</td>
<td>October 18 - 22</td>
</tr>
<tr>
<td>Discussing Findings</td>
<td>October 25 - 29</td>
</tr>
<tr>
<td>Writing Conclusions and Recommendations</td>
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<tr>
<td>Effective Presentations</td>
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<tr>
<td>Final Report editing</td>
<td></td>
</tr>
<tr>
<td>Team Project Presentations</td>
<td>November 1 - 5</td>
</tr>
</tbody>
</table>
6. References:


Ill some problems with details. There is some evidence of proofreading and editing but stil .Be specific and check your work and you will do fine

Purpose 18+ organisation 16+ content 23 + language 25= 83/100 >> 4.15/5
Appendix E: Sample Assignment 3

Fall 20XX
Thursday, October 01, 20XX
COMM101-0X
Communication I
Traffic Accidents and young men in the UAE
Done by XXXXX XXXXX – 1111111
Instructor name: XXXXX XXXXX
Sunday, September 13, 20XX

Abstract
Traffic accidents are considered the fatal cause of death in the UAE. This study was done to determine why young men in the UAE disobey the traffic laws. We made a survey which was answered by 20 students from different universities. We came up with many results that highlight driving behavior as a big cause of traffic accidents. Finally we made a list of recommendations that might be helpful to alter the driving behavior of youngsters.
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Method ......................................................... 5
Results .......................................................... 6
Discussion ...................................................... 9
Conclusion ...................................................... 10
Recommendation .............................................. 10
References ..................................................... 12
Appendix ....................................................... 13
1. Introduction

Traffic accidents are considered the second major cause of death after cardiovascular disease in the UAE. Although the police department enacts strict laws and policies for the drivers, the high rate of car accident fatalities still does not change noticeably. As an Emirite citizen who lives in the UAE, I care about what is going on around me especially for the age group that represents me (17-23). Therefore, I decided, with my colleagues to do study about this topic because we feel that we are suitable to undertake this task. In addition, the driving behavior of young people in our age group is commonly known. As a result, we might be capable of giving solutions and sophisticated recommendation to alter the driving behavior of youngsters and reduce the number of car accident fatalities in the UAE. So to accomplish our study, we surveyed 20 male students from different universities and focused only on two variables which are drivers’ behavior and speed. We initiated our study with a research question: “Why do young men in the UAE disobey the traffic laws?”

After accomplishing our survey, we collected the quantitative data and converted it into charts and diagrams to get more clear results. These results were analyzed and discussed thoroughly. Finally, we made a list of recommendations that might be helpful to alter the driving behavior of youngsters.

2. Literature review

Driving is very important in the United Arab Emirates (UAE) for working, social life, entertainment, educational, economic as well as recreational and other reasons, but motor vehicle crashes are a major cause of injury, disability and death [1]. Road traffic accidents (RTAs) are
increasingly being recognized as a growing public health problem in Bedouin Arabian Gulf countries [2]. This literature review will demonstrate the following points; high rates of accident, age and the causes of RTAs, which have been discussed in three articles [1-3].

2.1 High rates of accidents

Previous studies have shown that casualty and fatality rates in the UAE and in other Gulf countries are much higher than in the developing countries with comparable vehicle ownership levels [2]. Compared to the UK and the USA, the extent of the problem becomes apparent [2]. Whereas the UK and USA recorded 0.72 and 1.51 RTA fatalities per hundred million vehicle kilometers, the UAE recorded a disproportionate 3.33 fatalities per hundred million vehicle kilometers [2]. In addition, the ratio of vehicles to population is greatest in the UAE which is 5.4 people per vehicle, compared to 2.1 people and 1.3 people per vehicle in the UK and US respectively [2]. Another study shows that the average fatality per 10,000 vehicles of UAE is 13.3. This figure is twice as much compared to neighboring oil rich countries like Kuwait and Saudi Arabia [2]. Different research done shows that road traffic fatalities are second only to cardiovascular disease in the list of major causes of death [2].

2.2 Age and Driving Behavior factors

Teen drivers have the highest crash rate per miles driven of any age group and among teens. The youngest teens have the worst crash rate. Crash rates are lower with each year of increasing age, but not until age 25–30 does the rate level off to that seen throughout most of adulthood [3]. The driving behavior for youngsters is being affected by various factors. These factors include
driving ability, development factors, personality factor, perceived environment and driving environment.

Firstly, driving ability is necessary for a person to avoid crashes [3]. This ability is acquired through knowledge, skill development, and experience [3]. That knowledge is often gained through driver education or driver training class.

Secondly, developmental factors are one big issue for young people [3]. Recent research reveals that young people’s brains are not fully developed until age 25 [3]. Also, personality factors are related to risky driving among young people [3]. Those with risky taking propensity are more likely to be involved in crashes [3].

Fourthly, perceived environment is considered the largest to influence on youthful driving behavior. Young drivers have been developing perceptions related to driving behavior for their entire life [3]. These perceptions were made due to the influence of parents, peers, community, culture and the media, for example, video games encourage aggressive behavior or car racing.

Finally, the driving environment has several features related to risky driving. Driving at night is more risky for young people than for mature drivers.

2.3 Causes of RTA

[1] demonstrates that almost 90% of all accidents could be attributed to driving behavior. Young drivers put themselves and others at risk by tending to speed, tailgating, making illegal lane changes, and weaving through traffic. One study[2] shows that the largest single cause of an accident was classed as careless driving, contributing to more than 36.5% of all casualties and fatalities in RTAs. Excessive speed took the second rank in all incidents accounting for 16% of
casualties and 27% of fatalities [2]. Together these two causes accounted for over 62% of all road traffic fatalities in UAE in 2000 [2]. The young drivers also fail to yield the right of way at controlled intersections (yield signs, stop sigh, and traffic lights). Young inexperienced drivers are also less likely to perceive hidden traffic risks and react to them appropriately [3]. Impaired driving can also be due to fatigue or distraction [3]. Sleepy driving due to fatigue is more common among young drivers than mature drivers. Life style is also involved in driving behavior issues. The use of cell phone, smoking or interacting with passengers, are other sources of distraction young novice driver may not have enough experience to hand while driving [3]. Young drivers and passengers also put themselves at risk by wearing their safety belts less often than mature driver and passengers [3]

From what we have read in this literature review, we notice that road traffic accidents affect the lives of people in the UAE tremendously. Therefore some attention shall be given to change the driving behavior of young people as well as raising the awareness of the audience. This study will highlight the causes of this issue and review some sophisticated and modern ways to overcome and solve such issues.

3. Purpose

The purpose of this study is to investigate why young men disobey traffic laws. This investigation will depend on two variables, driving behavior and speeding.

4. Method

In order to accomplish our study, we made surveys and interviews to collect data related to our topic. We surveyed twenty male students, ten from the PI, five from the American University of
Sharjah (AUS) and five from the United Arab Emirates University (UAEU) within the age group of 18-28. We chose this age group because the statistics show that a tremendous number of accidents is caused by them. Also we interviewed two students, one from the PI and one from the UAEU. The survey took place inside the male campus of each university on the 8th of October 2009.

The survey had about ten questions, one of them is an open-ended question and the rest of them are closed-ended questions (one numerical question, two likert-scale questions and six multiple choice questions).

The resulted data collected from both data collection tools will be used for charts, designs and analysis. After we accomplished our project, it was reported in the final report and demonstrated in the final presentation.

5. Results:

Chart 1:

The red color represents the average speed above the speed limit, whereas the blue color represents the average speed below the speed limit. Only few respondents are complying with speed regulations. Speed is the limiting variable, chosen in order to compare between the behaviors of the respondents.
Chart 2:
More than half of our respondents have experienced RTAs or the loss of a family member due to RTAs. This result ensures that the rest of the findings are realistic.

Chart 3:
More than half of the respondents (65%) are passionate about wearing seatbelts. In contrast, few respondents abide by seatbelts regulations.
Chart 4:

Red color represents personal factors. Whereas, blue color represents external factors. The majority of respondents relates violation of speed regulations with personal factors.

Chart 5:

This chart concludes our survey findings. Respondents were faced with three hypothetical cases. In two situations, the majority of the respondents behaved dangerously. The results will be explained thoroughly in the discussion part of our study.
5. Discussion

Teen drivers have the highest crash rate per miles driven of any age group. Also, studies show that the casualty and fatality rates in the UAE are much higher than in the developed countries. This study has been done to answer our research question:

“Why do young men in the UAE disobey the traffic laws?”

Our study showed that a high number of respondents are driving faster in the highway [Chart 3]. While different research showed that this high number of speeders may be correlated with the high number of respondents who experienced traffic accidents. This probably because they lack of experience to avoid accident or maybe because the environment they raised in encourages speeding.

The research was also useful in investigating the care of taking safe behavior when driving the car. It showed that high numbers of respondents were impassionate about wearing the seatbelt. This may concludes that this behavior is resulted due to external and personal factors [Chart 4]. This chart showed that being in hurry is the main reason for exceeding speed limits. This most likely because people like to show some self-confidence or fate-believing attitude whenever they start driving.

Also, our study compared three cases where drivers may show either risky behavior or safe behavior [Chart 5]. In term of answering the phone calls, the majority of the respondents answered the phone call while driving. This may likely because they think that it is not a big
deal to multi-task while driving. In term of speeding in the highway, the figures showed that the
driver either took the safe behavior which slowing while driving in the highway or the risky
behavior which is speeding while driving in the high way. Also, most of the respondents showed
a selfish attitude when the pedestrians are crossing the road. They may ignore the pedestrians or
drive around them.

Conclusion

In conclusion, our research results are the same as the other studies in this field which answered
our research question. Yet, analysis of data gathered from the survey gives us the conclusion that
driving behavior and speeding are the main causes of traffic accidents. The results conclude that
traffic accidents are caused due to the ignorance of drivers and their lack of experience.

6. Recommendation

Through our study, we made a list of recommendations which we would like to share with other
people. Thus, our recommendations are:

- Students shall leave to their campus earlier to avoid being in hurry.
- Young drivers shall respect drivers’ rights as well as the pedestrians.
- The ministry of education shall be alerted to this issue of the driving behavior of
  youngsters. They shall make a subject associated with good driving behavior.
- The Universities in UAE, as well as the PI, shall give seminars or courses that are done
  once at least every two weeks for this issue.
• Teens are less likely to recognize dangerous situation while driving a car. Therefore, parents play vital role in their teen’s life. Parents can still do much to enforce safe driving behavior behind the wheel.
• Parents shall use every possible opportunity to teach their teen how to stay safe while driving. The most considered thing to be taught to the youngsters is to stay focused. In other words, multitasking while driving shall be completely avoided.
• Since parents influence their teen’s driving behavior, parents shall be a good role model.
• A driving agreement between parents and their teen might be helpful. This agreement shall include some strict rules that will serve as a guideline for the teen’s independence driving.

Research recommendation:

• Further studies and more sophisticated research shall be done to improve and raise the awareness of our community for this particular issue. These studies might give straightforward evidence to the community and highlight bad driving behavior as a serious issue in our society.
7. References

[Accessed on 7 September 2009]

[Accessed on 12 September 2009]

[Accessed on 7 September 2009]
8. Appendix

Survey questionnaire

This survey aims to gather information about driving behavior exhibited by young men in the UAE. Please answer all questions based on your views and experience.

1. What is your average speed in downtown area (in kilometers)?
   a) 50 - 80
   b) 80 - 100
   c) 100 - above

2. What is your average speed when you drive on the highway (in kilometers)?
   a) 80 - 100
   b) 100 - 120
   c) 120 - 160
   d) 160 - 200
   e) 200 - above

3. Have you experienced a traffic accident or the loss of a family member due to traffic accidents?
   o Yes
   o No

4. What makes you drive exceeding the speed limit?
   a) Masculinity.
   b) Peer pressure.
   c) Being in a hurry.
   d) Trust in fate.
   e) Influence of car racing in movies and games.

5. It is critical for you and your passengers to wear seatbelts.
   (Circle one of the options)
   strongly disagree disagree neutral agree strongly agree

6. Your mobile phone rings while you are driving. How will you react?
   a) Answer the phone call.
   b) Text the caller.
   c) Ignore the call.
7. There is a slowing car on the high road in front of you. How will you react?
   a) Change to the left lane.
   b) Change to the right lane.
   c) Slow down.
   d) Flash your head light and tailgate the car until it changes lanes.

8. A pedestrian is crossing the street from an undesignated area. How will you react?
   a) Slow down and let him/her pass.
   b) Sound the horn to alert him.
   c) Avoid the pedestrian by driving around him.

9. Have you ever participated in a traffic safety campaign?
   o Yes.
   o No.

10. It is extremely important to check the condition of the car before driving.
    (Circle one of the options)

    strongly disagree disagree neutral agree strongly agree

11. What other risks that you have identified, could cause traffic accidents?
Appendix F: Survey 1

The following survey is being conducted in order for the researcher to get an idea of the initial student profile on a Communications 101 course. The information will be part of the data collected for an EdD (Doctorate in Education) thesis done for the University of Exeter, UK, on the Development of Academic Literacies in an English Medium College in the UAE -Challenges-.

Please fill in the following information:

1. Name…………………………………………………………………………………………………………………………………………………..
2. Circle your age: 17 18 19 20 21
3. Nationality: Emirati /Other………………………………………………..(state nationality)
4. Did you join the Petroleum Institute from a) a public school b) a private school?
5. What was your high school GPA or %? ..........................................................
6. What is your current choice of Major: a) chemical engineering b) mechanical engineering c) electrical engineering d) petroleum engineering e) geosciences
7. Do you live in a) the dorms  b) at home?
8. What was your TOEL score on entering the Freshman Communication program?
9. Have you attended other English courses apart from high school and Foundation courses?
   No/Yes………………………………………..(which one?)
10. On a scale from 1 to 5, do you consider yourself to be an excellent, average or not so successful student? Circle your answer, please.

   excellent  5   4   3   2   1
   average
   not very successful
11. How long on average do you spend on homework daily?
   a) I only study for exams   b) 30 minutes   c) 1 to 2 hours   d) More than 2 hours per day…… (how many?)

Thank you for answering the questionnaire. The data will be dealt with anonymously and be used only for the thesis mentioned above.
Appendix G: Survey 2

In our ongoing effort to improve the quality of our product we would like to reflect on how your skills have improved in the areas mentioned below. Check the most appropriate answer.

Your opinions are important to us.

1. My reading skills have improved:
   a. A lot
   b. Quite a lot
   c. A little
   d. Not at all

2. My writing skills have improved:
   a. A lot
   b. Quite a lot
   c. A little
   d. Not at all

3. My listening skills have improved:
   a. A lot
   b. Quite a lot
   c. A little
   d. Not at all

4. My presentation skills have improved:
   a. A lot
   b. Quite a lot

5. My teamwork skills have improved:
   a. A lot
   b. Quite a lot
   c. A little
   d. Not at all

6. My critical thinking skills have improved:
   a. A lot
   b. Quite a lot
   c. A little
   d. Not at all

7. My organization and planning skills have improved:
   a. A lot
   b. Quite a lot
   c. A little
   d. Not at all
<table>
<thead>
<tr>
<th>8.</th>
<th>My reflection skills have improved:</th>
<th>courses, I have had to work:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>A lot</td>
<td>a A lot harder</td>
</tr>
<tr>
<td>b</td>
<td>Quite a lot</td>
<td>b Somewhat harder</td>
</tr>
<tr>
<td>c</td>
<td>A little</td>
<td>c About the same</td>
</tr>
<tr>
<td>d</td>
<td>Not at all</td>
<td>d Not as hard</td>
</tr>
<tr>
<td>e</td>
<td>Not at all</td>
<td>e A lot less</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>9.</th>
<th>Motivation. In comparison to other courses, my motivation in COMMS 101/151 is:</th>
<th>11. Independent work. In comparison to other courses, my outside-class work has been:</th>
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<td>a</td>
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<td>c</td>
<td>About the same</td>
<td>c About the same</td>
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<td>d</td>
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<td></td>
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<tr>
<td>e</td>
<td>A lot less</td>
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</tr>
</tbody>
</table>

| 10.  | 10. Workload. In comparison to other                                            |                                                                                 |
|------|---------------------------------------------------------------------------------|                                                                                 |
Appendix H: Writing prompts for reflective writing

Name……………………………………………………………… Participation in lessons…………/5%

In a couple of paragraphs, please justify below what percentage out of 5% you think you deserve by referring to the following:

• Do you participate in Communication classes actively? Listening, asking questions, helping fellow students, asking the instructor for help or clarification

• What was your attitude to studying English before the course? Has the course changed this in any way?

• How many times have you been absent and why?

• Have you visited the instructor in her office or e-mailed her to ask for more information on tasks?

• How do you usually do your homework for Communications?

• What grade do you think you should get for participation?
Appendix I: Grading rubric for written assignments 1, 2 and 3

<table>
<thead>
<tr>
<th>Writing rubric</th>
<th>Purpose 20%</th>
<th>Organisation 20%</th>
<th>Content 30%</th>
<th>Language 30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exceeds expectations</td>
<td>Objective clearly stated. Central focus clear and sustained throughout the report.</td>
<td>Clear structure or pattern engages the reader. Whole report is extremely readable (clear, cohesive, coherent &amp; unified)</td>
<td>Information is sufficient, relevant and accurate statements/opinions are well developed, supported and explained.</td>
<td>Style and expression highly developed and engaging. Excellent grammar, spelling, and punctuation (virtually error-free). Evidence of editing &amp; proofreading.</td>
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<tr>
<td>Meets Expectations</td>
<td>Objective adequately stated. Central focus generally clear and mostly sustained throughout the report. Some awareness of main ideas.</td>
<td>Adequate structure or pattern guides the reader. Most of the report is readable (clear, cohesive, coherent &amp; unified). Paragraph transitions are adequate, tables/figures generally relevant, labeled adequately and referred to.</td>
<td>Information is generally sufficient, relevant and accurate though may not always be well developed, supported or explained. All sources are identified and referenced appropriately.</td>
<td>Fluent style and expression meet reader expectation. Some evidence of editing &amp; proofreading. Occasional errors in grammar, spelling, punctuation and/or readability do not disrupt the flow of communication or interfere with comprehension. Acceptable appearance of Report, Figures/Tables/References.</td>
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<td>B- / C+ / C</td>
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<td>16 15 14</td>
<td>24 23 22 21</td>
<td>24 23 22 21</td>
</tr>
<tr>
<td>Needs improvement</td>
<td>Objective not clearly stated, lacks central focus. Limited/No awareness of main ideas.</td>
<td>Poor organization and structure loses the reader and whole report lacks clarity, coherence and cohesion. Paragraph transitions are rare/missing. Tables/figures often missing, irrelevant, poorly labeled, and/or not referred to.</td>
<td>Information may not be relevant or accurate. Statements and opinions lack support. Sources are not identified or referenced appropriately.</td>
<td>Frequent errors in grammar, spelling, punctuation and/or readability disrupt the flow of communication and/or interfere with comprehension. Little or no evidence of editing &amp; proofreading. Unprofessional appearance of Report, Figures/Tables/References.</td>
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<td>13 12 11 10 0</td>
<td>20 18 16 14 12 10 0</td>
<td>20 18 16 14 12 10 0</td>
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</table>
Appendix J: Interview protocol for semi-structured interview

1. How much time do you usually spend on homework?
3. Do you make a plan for studies after class time? What do you plan for?
4. How do you prepare for exams?
5. Have your study habits changed from when you were at school?
6. How did you prepare at school?
7. Have your study habits changed from when you were in the foundation course?
## Appendix K: Instructor observations

<table>
<thead>
<tr>
<th>Categories</th>
<th>Showed assignments in advance for instructor feedback*</th>
<th>Absent frequently without excuse**</th>
<th>Frequented office hours ***</th>
<th>E-mailed instructor to inquire about coursework ** **</th>
<th>Submitted assignments after deadline ****</th>
<th>Submitted assignments well before deadline ****</th>
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</thead>
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All the data above were collected during the main data collection period (weeks 3 to 10) of the academic literacy skills course.
*Data collected from classroom observations and instructor office hours.
**Data collected from HEI’s attendance records.
***Data collected from instructor office hours.
****Data collected from e-mails to the instructor, as the assignments were sent as e-mail attachments.
Appendix L: Complementing data collection methods and data yielded
(the abbreviations used for types of data are Qual for qualitative data and Quant for quantitative data)

<table>
<thead>
<tr>
<th>Method (P=primary data S=secondary data)</th>
<th>Data yielded</th>
<th>Supporting method</th>
<th>Research Question #</th>
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<td>Survey 1 (P)</td>
<td>A portrayal of students’ starting point on the course (Quant/Qual)</td>
<td>Classroom observations (Qual)</td>
<td>1, 2, 3</td>
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<td>Survey 2 (S)</td>
<td>Students’ perceptions of their academic literacy skills development at the end of the course (Quant)</td>
<td>Analysis of reflective writing assignment (Qual)</td>
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<td>Survey 3 (S)</td>
<td>Student perceptions of the efficacy of the course instructor (Quant)</td>
<td>Classroom observations. Analysis of reflective writing assignment (Qual)</td>
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<td>Grade comparisons (P)</td>
<td>Longitudinal quantitative data on academic literacy skills development (Quant)</td>
<td>Analysis of three written assignments (Quant/Qual)</td>
<td>1, 2</td>
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<td>Separation of students into groups of successful and non-successful students (Quant)</td>
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<td>Grade comparisons (Quant) Classroom and instructor observations (Qual/Quant)</td>
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Appendix M: Ethical consent form

I have been fully informed about the aims and purposes of the project. I understand that:

there is no compulsion for me to participate in this research project and, if I do choose to participate, I may at any stage withdraw my participation.

I have the right to refuse permission for the publication of any information about me any information which I give will be used solely for the purposes of this research project, which may include publications.

If applicable, the information which I give may be shared between any of the other researcher(s) participating in this project in an anonymized form.

All information I give will be treated as confidential.

The researcher(s) will make every effort to preserve my anonymity.

(Signature of participant)                                                         (Date)
(Printed name of participant)

One copy of this form will be kept by the participant; a second copy will be kept by the researcher(s)

Contact phone number of researcher(s): ..........................................................

If you have any concerns about the project that you would like to discuss, please contact:

.................................................. OR..................................................

Data Protection Act: The University of Exeter is a data collector and is registered with the Office of the Data Protection Commissioner as required to do under the Data Protection Act 1998. The information you provide will be used for research purposes and will be processed in accordance with the University’s registration and current data protection legislation. Data will be confidential to the researcher(s) and will not be disclosed to any unauthorised third parties without further agreement by the participant. Reports based on the data will be in anonymized form.
## Appendix N: MOLT Observation Scheme: Part A

### Motivational Orientation of Language Teaching (MOLT)

#### Observation Scheme: Part A

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<tr>
<th>Time</th>
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<th>Teacher's Motivational Practice</th>
<th>Encouraging Positive Retrospective Self-Evaluation</th>
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#### Time Table

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<th>Learners' Behavior</th>
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#### Sub-Total

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#### Notes

- Additional notes and guidelines specific to the MOLT observation scheme.

---

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## Appendix O: Survey 1 findings

### Successful students

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<th>Student</th>
<th>Time spent on homework</th>
<th>Living at home/in dorm</th>
<th>Emirati/non-Emirati</th>
<th>private/public school</th>
<th>Self eval (1-5) 1=poor, 5=good</th>
<th>Extra English</th>
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<td>Ahmed</td>
<td>1-2h</td>
<td>Home</td>
<td>Emirati</td>
<td>Pub</td>
<td>4</td>
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<td>Dorm</td>
<td>Egyptian</td>
<td>Pri</td>
<td>4</td>
<td>No</td>
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<td>Abdulla</td>
<td>4-5h</td>
<td>Dorm</td>
<td>Sudanese</td>
<td>Pub</td>
<td>4</td>
<td>No</td>
</tr>
<tr>
<td>Abdelaziz</td>
<td>3h</td>
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<td>Emirati</td>
<td>Pub</td>
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<td>Yes</td>
</tr>
<tr>
<td>Amer</td>
<td>30min*</td>
<td>Home</td>
<td>Emirati</td>
<td>Pub</td>
<td>5</td>
<td>No</td>
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<tr>
<td>Anwar</td>
<td>1-2h</td>
<td>Dorm</td>
<td>Sudanese</td>
<td>Pub</td>
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<td>No</td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td>*<em>Over 1h <em>one exception</em></em></td>
<td><strong>Dorm/Home</strong></td>
<td><strong>Emirati/non-Emirati</strong></td>
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### Average students

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<th>private/public school</th>
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<td>n/a</td>
<td>n/a</td>
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<td>Emirati</td>
<td>Pub</td>
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<td>Emirati</td>
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### Non-successful students

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<td><strong>Dorm</strong></td>
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## Appendix P: Compilation of students’ grades

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<th>High school exit grade</th>
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<th>Assign 2</th>
<th>Assign 3</th>
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*this difference is due to the fact that Sultan’s first assignment was well below the required standards and it has not been included in the calculation of the group average
### Appendix Q: Ratio of comments on linguistic errors to the word count in Assignment 1

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<tr>
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<tr>
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<td>Sager</td>
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*Rashed’s word count is substantially higher than the rest of this subgroup’s. By excluding his efforts, the ratio would have been 5.0/580, which is possibly more descriptive of the subgroup of average students.*
Appendix R: Features of *academic socialization* in Assignment 1

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<tr>
<th>Students adhering to features</th>
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<th>Followed submission guidelines</th>
<th>In-text citations/References</th>
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<td>Yes, but order slightly incorrect/correct</td>
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<td>Somewhat/ incorrect</td>
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*second submission, as the first one was an essay about the research topic with no sources or references
Appendix S: Breakdown of grades and grade trends for Assignments 2 and 3

### Successful students

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**GRADE RANGE**

**Assignment 2**

| Assignment 2 | 16-20 | 16-20 | 23-30 | 21-30
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**GRADE RANGE**

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Non-successful students

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**GRADE RANGE**

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Appendix T: A collation of the error-to-word count ratio and instructor feedback for evidence of study skills and academic socialization in Assignment 2 and 3 including modes for each subgroup

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<th>Academic socialization</th>
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<td>Name</td>
<td>(A)=Arabic</td>
<td>(E)=English setting for Microsoft Word</td>
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<td>2 04/1551 = 0.26</td>
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</tr>
<tr>
<td></td>
<td>3 12/3255 = 0.37</td>
<td>Very good</td>
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<tr>
<td>Ali (A)</td>
<td>2 0/1044 = 0</td>
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<tr>
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<td>3 1/2068 = 0</td>
<td>Very good</td>
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<tr>
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<tr>
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<td>3 25/2550 = 0.98</td>
<td>Small slips</td>
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<tr>
<td>Abdelaziz (A)</td>
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<td>Many slips</td>
</tr>
<tr>
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<td>3 10/2951 = 0.34</td>
<td>Small slips</td>
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<td>Amer (A)</td>
<td>2 12/1214 = 0.98</td>
<td>Many slips</td>
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<td>3 16/3022 = 0.53</td>
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<td>Anwar (A)</td>
<td>2 4/1132 = 0.35</td>
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<td>3 25/2248 = 1.11</td>
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<td>Name</td>
<td>Average students</td>
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<td>Fares (E)</td>
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</tr>
<tr>
<td>2 25/1020 = 2.45 Some slips Some slips Good Somewhat Somewhat Somewhat/ Somewhat</td>
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<td>3 14/2339 = 0.6 Small slips Small slips Very good Good Very good Somewhat/ Good</td>
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<td>2 40/926 = 4.3 Many slips Some slips Some slips Somewhat Somewhat Good/ Somewhat</td>
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<tr>
<td>3 24/2337 = 1.0 Small slips Some slips Some slips Good Good Good/ Good</td>
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<td></td>
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<td>Mohamed (E)</td>
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<tr>
<td>3 5/2294 = 0.22 Small slips Very good Very good Somewhat Very good Somewhat/ Good</td>
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<tr>
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<table>
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<th>Error/word count</th>
<th>Grammar</th>
<th>Spelling</th>
<th>Punctuation</th>
<th>Followed assignment guidelines</th>
<th>Followed submission guidelines</th>
<th>In-text citations/references</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samir (E)</td>
<td>2</td>
<td>Many slips</td>
<td>Some slips</td>
<td>Good</td>
<td>Somewhat</td>
<td>Somewhat</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Many slips</td>
<td>Some slips</td>
<td>Good</td>
<td>Somewhat</td>
<td>Somewhat</td>
</tr>
<tr>
<td>Saif (A)</td>
<td>2</td>
<td>Many slips</td>
<td>Some slips</td>
<td>Some slips</td>
<td>Somewhat</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Many slips</td>
<td>Some slips</td>
<td>Good</td>
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<td>Somewhat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Many slips</td>
<td>Some slips</td>
<td>Some slips</td>
<td>Somewhat</td>
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<td>-----</td>
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<td>------------</td>
<td>------------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>Sager (A)</td>
<td>2</td>
<td>20/963 = 2.1</td>
<td>Many slips</td>
<td>Some slips</td>
<td>Some slips</td>
<td>Somewhat</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>40/1938 = 2.1</td>
<td>Many slips</td>
<td>Some slips</td>
<td>Some slips</td>
<td>Somewhat</td>
</tr>
<tr>
<td>Sultan (A)</td>
<td>2</td>
<td>32/740 = 4.2</td>
<td>Many slips</td>
<td>Some slips</td>
<td>Good</td>
<td>Somewhat</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>59/1953 = 3.02</td>
<td>Many slips</td>
<td>Some slips</td>
<td>Good</td>
<td>Somewhat</td>
</tr>
<tr>
<td>MODE (A)</td>
<td>2</td>
<td>Average 27/956 = 2.8</td>
<td>Many slips</td>
<td>Some slips</td>
<td>Good</td>
<td>Somewhat</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Average 57/2264 = 2.5</td>
<td>Many slips</td>
<td>Some slips</td>
<td>Good</td>
<td>Somewhat</td>
</tr>
</tbody>
</table>
## Appendix U: Classroom observation findings and sample observation sheet

(The four students selected for the second case study are shaded)

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Student</th>
<th>MOLT Variable</th>
<th>Attention (frequency)</th>
<th>Participation (frequency)</th>
<th>Volunteering for teacher-fronted activity (frequency)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Successful Students</strong></td>
<td>Ahmed</td>
<td></td>
<td>75%</td>
<td>90%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Ali</td>
<td></td>
<td>80%</td>
<td>65%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Abdulla</td>
<td></td>
<td>40%</td>
<td>40%</td>
<td>65%</td>
</tr>
<tr>
<td></td>
<td>Abdelaziz</td>
<td></td>
<td>30%</td>
<td>75%</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>Amer</td>
<td></td>
<td>30%</td>
<td>25%</td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td>Anwar</td>
<td></td>
<td>75%</td>
<td>65%</td>
<td>60%</td>
</tr>
<tr>
<td><strong>Subgroup frequency</strong></td>
<td></td>
<td></td>
<td>55%</td>
<td>60%</td>
<td>68%</td>
</tr>
<tr>
<td><strong>Non-successful students</strong></td>
<td>Samir</td>
<td></td>
<td>30%</td>
<td>1.0%</td>
<td>55%</td>
</tr>
<tr>
<td></td>
<td>Saif</td>
<td></td>
<td>10%</td>
<td>1.5%</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Sager</td>
<td></td>
<td>1.5%</td>
<td>1%</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>Sultan</td>
<td></td>
<td>1.5%</td>
<td>0%</td>
<td>1.5%</td>
</tr>
<tr>
<td><strong>Subgroup frequency</strong></td>
<td></td>
<td></td>
<td>17.5</td>
<td>0.85</td>
<td>0.3</td>
</tr>
</tbody>
</table>

### EXPLANATION OF MOLT VARIABLES:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention</td>
<td>Students appear to be paying attention: They are not displaying any inattentive or disruptive behavior; they are looking at the teacher and following his or her movements, looking at visual stimuli, turning to watch another student who is contributing to the task, following the text being read, or making appropriate non-verbal responses.</td>
</tr>
<tr>
<td>Participation</td>
<td>Students are actively taking part in classroom interaction or working on assigned activity.</td>
</tr>
<tr>
<td>Volunteering for teacher-fronted activity</td>
<td>Students are volunteering without the teacher having to coax them.*</td>
</tr>
</tbody>
</table>

*The original statement in the MOLT scheme specified *one third of the students* which was not feasible for investigating the ten students in the two subgroups; six successful students and four non-successful students, so the behavior of each of the ten students was considered instead.
Sample observation

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Student</th>
<th>MOLT Variable</th>
<th>lesson 21 week 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>September 27, 2009</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Attention* (frequency)</td>
<td>Participation (frequency)</td>
</tr>
<tr>
<td>Successful Students</td>
<td>Ahmed</td>
<td>xxxxx</td>
<td>xxxxx</td>
</tr>
<tr>
<td></td>
<td>Ali</td>
<td>xxxxx</td>
<td>xxx</td>
</tr>
<tr>
<td></td>
<td>Abdulla</td>
<td>xxx</td>
<td>xxx</td>
</tr>
<tr>
<td></td>
<td>Abdelaziz</td>
<td>xxx</td>
<td>xxx</td>
</tr>
<tr>
<td></td>
<td>Amer</td>
<td>xxxxx</td>
<td>xxx</td>
</tr>
<tr>
<td></td>
<td>Anwar</td>
<td>xxxxx</td>
<td>xxxxx</td>
</tr>
</tbody>
</table>

| Subgroup frequency            |         |               |

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Student</th>
<th>MOLT Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Attention (frequency)</td>
</tr>
<tr>
<td>Non-successful students</td>
<td>Samir</td>
<td>xx</td>
</tr>
<tr>
<td></td>
<td>Saif</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Sager</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Sultan</td>
<td>0</td>
</tr>
</tbody>
</table>

| Subgroup frequency            |         |               |

*the frequencies were recorded at 10 minute intervals of a 50 minute lessons.

**A sample of students’ comments from the recording of lesson 21, week 5:**
- Do we have to use journal articles only? Why not others? (Samir)
- I worked hard on this, Miss. Why did I get such a low grade? (Amer)
- Me, too (Abdelaziz)
- What’s this IEEE anyway? (Abdelaziz)

In addition other comments were recorded on the sheet but cannot be shown here due to the privacy policies of the institute and the company that is its main sponsor.
Appendix V: Coded findings for semi-structured interviews

Explanation of codes:
(1) time management skills
(2) willingness to adjust to the demands in HE
(3) balance between obligations in HE and at home (3).

1. How much time do you usually spend on homework?
   a. Ahmed: I study in the evenings and break it up into two separate two hour blocks. (1)
   b. Amer: Well, that depends on whether we get homework. Not a lot, I guess. (1)
   c. Samir: I do about one or two hours, but not every day. (1)
   d. Sultan: I don’t have much time for homework. (1) (3)

   a. Ahmed: I usually prefer to work on my own.
   b. Amer: Mostly with friends, sometimes I do homework alone.
   c. Samir: Alone, Miss. Other people just talk all the time.

3. Do you make a plan for studies after class time? What do you plan for?
   a. Ahmed: Yes. I check the deadlines for assignments and exams and I make myself a study schedule. (1) (2)
   b. Amer: No. (1) (2)
   c. Samir: Sometimes. Especially for exams. (1) (2)
   d. Sultan: No. (1) (2)

4. How do you prepare for exams?
   a. Ahmed: I do my homework as well as I can and I read a lot and practice. (1) (2)
   b. Amer: I stay up all night before the exam to study. (1)
   c. Samir: I try to solve lots of problems and for COMM I read more. (1)
   d. Sultan: I try to do my best. (2)

5. Have your study habits changed from when you were at school?
   a. Ahmed: Not a lot, but I do spend more time doing homework, like the COMM assignments. (1) (2)
   b. Amer: No, probably not. (1) (2)
   c. Samir: Yes. I must do much more here at college than at school. (1) (2)
   d. Sultan: No. (1) (2)

6. How did you prepare at school?
   a. Ahmed: I listened in class and I did the homework every day. (2)
   b. Amer: I mostly remembered the lessons so I didn’t prepare. (2)
   c. Samir: Sometimes I studied hard and sometimes not. (2)
   d. Sultan: I didn’t need to. I did homework. (2)
7. **Have your study habits changed from when you were in the bridging course?**

   a. Ahmed: Not really. *Homework just takes a bit longer to do.* (1) (2)

   b. Amer: No. (2)

   c. Samir: I try to do more but *sometimes I must do things for my family.* (3)

   d. Sultan: No. I also worked then. (3)
Appendix W: Samples of reflective writing
(see Appendix H for prompt)

Name Ahmed  Participation in lessons…. 5/5%

I think I participate a lot and actively in these communication classes. There were many kinds of knowledge I’ve got since I attended this course. I paid attention a lot. Listening and asking questions are the things that I’ve always done in classes to get more details about the tasks and also for seeking feedback for I did before I submitted. Helping friends is also what I usually did when they asked me. Most of the time, I attended every classes except for some days I was absent for the reason to work with my accomplishing a specific task. I always got a permit from the instructor. Sometimes I went to her office for more information and help on tasks. I usually do my homework for Communications on my break time on campus or at night alone. Therefore, I think my efforts that I put for this course represent 5% grade in participation.

Name Sultan  Participation in lessons…. 5/5%

At the beginning of the course I was not participating actively, because of some problems I had, but at the end I left the problems back and working hard on my studies. As I heard from students that the course is hard and needs too much work, but it’s not hard and only we should work hard. I was absent but it was for some problems with our scholarship from the company that affected me. I visited the instructor in her office once and I was asking about the references. I’m working hard to finish my homework on time. Actually I don’t know, what ever my instructor want to put for me it will be fine.
### Appendix X: Survey 2 findings

1. **My reading** skills have improved:
   - a. A lot 16%
   - b. Quite a lot 37%
   - c. A little 47%
   - d. Not at all 0%

2. **My writing** skills have improved:
   - a. A lot 53%
   - b. Quite a lot 42%
   - c. A little 5%
   - d. Not at all 0%

3. **My listening** skills have improved:
   - a. A lot 26%
   - b. Quite a lot 42%
   - c. A little 32%
   - d. Not at all 0%

4. **My presentation** skills have improved:
   - a. A lot 58%
   - b. Quite a lot 26%
   - c. A little 16%
   - d. Not at all 0%

5. **My teamwork** skills have improved:
   - a. A lot 53%
   - b. Quite a lot 37%
   - c. A little 10%
   - d. Not at all 0%

6. **My critical thinking** skills have improved:
   - a. A lot 21%
   - b. Quite a lot 63%
   - c. A little 16%
   - d. Not at all 0%

7. **My organization and planning** skills have improved:
   - a. A lot 42%
   - b. Quite a lot 42%
   - c. A little 16%
   - d. Not at all 0%
8. My **reflection** skills have improved:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>a</td>
<td>A lot</td>
<td>21%</td>
</tr>
<tr>
<td>b</td>
<td>Quite a lot</td>
<td>47%</td>
</tr>
<tr>
<td>c</td>
<td>A little</td>
<td>32%</td>
</tr>
<tr>
<td>d</td>
<td>Not at all</td>
<td>0%</td>
</tr>
</tbody>
</table>

9. **Motivation. In comparison to other courses, my motivation in COMMS 101/151 is:**

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<tr>
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</thead>
<tbody>
<tr>
<td>a</td>
<td>A lot higher</td>
<td>5%</td>
</tr>
<tr>
<td>b</td>
<td>Somewhat higher</td>
<td>53%</td>
</tr>
<tr>
<td>c</td>
<td>About the same</td>
<td>21%</td>
</tr>
<tr>
<td>d</td>
<td>Not as high</td>
<td>21%</td>
</tr>
<tr>
<td>e</td>
<td>A lot less</td>
<td>0%</td>
</tr>
</tbody>
</table>

10. **Workload. In comparison to other courses, I have had to work:**

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<thead>
<tr>
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</tr>
</thead>
<tbody>
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<td>a</td>
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<td>42%</td>
</tr>
<tr>
<td>b</td>
<td>Somewhat harder</td>
<td>53%</td>
</tr>
<tr>
<td>c</td>
<td>About the same</td>
<td>5%</td>
</tr>
<tr>
<td>d</td>
<td>Not as hard</td>
<td>0%</td>
</tr>
<tr>
<td>e</td>
<td>A lot less</td>
<td>0%</td>
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</tbody>
</table>

11. **Independent work. In comparison to other courses, my outside-class work has been:**

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<thead>
<tr>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>A lot higher</td>
<td>68%</td>
</tr>
<tr>
<td>b</td>
<td>Somewhat higher</td>
<td>16%</td>
</tr>
</tbody>
</table>
References


Lievens, J. (2012). Debunking the ‘nerd’ myth: Doing action research with first-year engineering students in the academic writing class. *Journal of Academic Writing, 2*(1), 74-84.


Russell, D. R. (2013). Contradictions regarding teaching and writing (or writing to learn) in the disciplines. What we have learned in the USA. *REDU Revista di Docencia Universitaria, 11*(1), 161-181.


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