

The Impact of Language and Math Proficiency Tests on Student Academic Achievement in HCT

دراسة حول مدى تأثير اختبارات الكفاءة في اللغة العربية و الإنجليزية و
الرياضيات على الأداء الأكاديمي عند طلبة وطالبات كليات التقنية العليا في
الفجيرة

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Abstract

This quantitative study investigates the linguistic impact of 6 main proficiency and standardized tests (CEPA reading test, CEPA writing test, CEPA math test, high-school English test, high-school Arabic test and high-school math test) on student academic student, as measured by student first year GPA. The sample population of this research are Emirati students from the academic year 2009-2010. They are foundation students, aged between 17-18, who completed their first year in the Eastern Region of the UAE known as Fujairah Emirate. The findings reveal that the adjusted r square value in the model accounts for 42% of variance in GPA – respectable model. This suggests that language proficiency accounts for 42% of the variance in students' GPA, whereas the remaining 58% are explained by other non-academic factors. Further, a key finding of the research shows that CEPA English test, a proficiency test, is the most significant predictor of student academic success ($r = 0.390$, $N = 471$, $p < .0005$, two-tailed). Interestingly, the findings also indicate that the high-school Arabic test is as effective in predicting student academic success as CEPA English test ($r = 0.325$, $N = 471$, $p < .0005$, two-tailed). The difference in correlation coefficient between CEPA English-reading test and high-school Arabic test is 0.065 which is basically negligible. The research also reveals positive medium correlations between the rest of the tests and student academic achievement. High-school math test was not a significant predictor as indicated when using a regression analysis; hence it is not considered in the correlational analysis. This research also reveals that there is no significant academic difference between male and female students in GPA ($t = 0.565$, $df = 469$, $p = 0.572 > 0.05$). Additionally, this research concludes interesting finding that shows no significant difference was found between high foundation and the low foundation students in GPA ($t = -0.806$, $df = 469$, $p = 0.420 > 0.05$).

فكرة موجزة

الدراسة تهدف الى ايجاد العلاقة بين ستة اختبارات أساسية في قياس القدرة في اللغة العربية، و الانجليزية و الرياضيات (اختبار السببا في القراءة باللغة الانجليزية، اختبار السببا في الكتابة باللغة الانجليزية، اختبار السببا في الرياضيات باللغة الانجليزية، الاختبار النهائي لطلبة الثانوية العامة في اللغة الانجليزية، الاختبار النهائي لطلبة الثانوية العامة في اللغة العربية و الاختبار النهائي لطلبة الثانوية العامة في مادة الرياضيات). الدراسة تختص بطلبة و طالبات كليات التقنية العليا فرع الفجيرة تتراوح أعمارهم ما بين 17-18 سنة و الذين أتموا المرحلة التأسيسية في التقنية في عام 2009-2010. الدراسة تظهر أن 42 % من التحصيل الأكاديمي للطلبة المشمولين في الدراسة يرجع لأسباب أكاديمية و 58% من التحصيل الأكاديمي يرجع لأسباب غير أكاديمية قد تشمل الدافع المعنوي للطلاب أو الدعم الاسري. الدراسة كذلك تظهر بأن اختبار السببا في القراءة باللغة الانجليزية هو من أكثر الاختبارات توقعا لنجاح الطلبة و الطالبات يليه الاختبار النهائي لطلبة الثانوية العامة في اللغة العربية. علما ان الفارق في التوقع ما بين اختبار السببا في القراءة باللغة الانجليزية و الاختبار النهائي لطلبة الثانوية العامة في اللغة العربية هو فارق بسيط جدا يكاد لا يذكر. مما يثبت أن مهارة القراءة و الكتابة في اللغة الام عند الطالب من المقومات الاساسية في تفوق الطالب نفسه في مهارة القراءة و الكتابة في اللغة المكتسبة (اللغة الانجليزية). المنهج المستخدم لإجراء البحث يعرف بالمنهج الكمي، و هذا وقد تم الاستعانة بالإحصاءات الافتراضية والوصفية للإجابة عن أسئلة البحث.

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Chapter 1: Introduction

1.1 Overview

Proficiency tests have become benchmarks that higher-education institutions worldwide and top educators in high-ranking educational positions rely on to indicate the language proficiency of a learner. These proficiency tests are also used to make high-stake decisions such as university entry and program placement. Cummins (1984) indicates that the concept of language proficiency is defined by some educators as a term that comprises 64 various language elements and by other researchers as a concept that comprises only one universal factor. Valdés and Figueroa (1994) state that "what it means to know a language goes beyond simplistic views of good pronunciation, correct grammar, and even mastery of rules of politeness". They elaborate their statement by also including that "knowing a language and knowing how to use a language involves a mastery and control of a large number of interdependent components and elements that interact with one another and that are affected by the nature of the situation in which communication takes place" (p. 34).

Oller and Damico (1991) concisely point out that the properties of the components of language proficiency are still debatable among researchers. The intricacy of language and the lack of agreement as to what constitutes language proficiency is significant for a major explanation. A language proficiency test has to be dependent on a valid definition of language proficiency; thus language proficiency tests should specify what definitions and theories they have based their tests on (Oller and Damico, 1991).

On the other hand, grade point average (GPA) is used to determine students' academic achievement in higher education institutions and it is measured by a linear mix of grades received in different courses (Lei, Bassiri & Schultz, 2001). In countries such as the United States of America, GPAs are considered as an outstanding predictor of successful academic performance (Jones, 1990). In Europe, Van Overwalle (1989) and in England, Johnes and Taylor (1980) revealed that GPAs are the most significant predictor of future academic achievement.

1.2 Background

Higher Colleges of Technology (HCT) is the largest higher education institution in the United Arab Emirates (UAE) and accepts the largest high-school student population yearly. HCT system functions in 17 separate campuses for male and female students in urban and rural sites in five emirates (Abu Dhabi, Dubai, Sharjah, Ras Al Kaimah and Fujairah) in addition to Al-Ain. The headquarters, known as Central Services, are situated Abu Dhabi city. The HCT is managed by a governing body which includes the Chancellor, the Vice Chancellor and other members from a range of sectors in the UAE chosen on the recommendation of the Chancellor. The Chancellor is the official representative of HCT. The Vice Chancellor is in charge of the administration of the institution and the implementation of its regulations (About HCT, 2011).

Currently, HCT system has a community of over 19,000 students and almost 2,000 staff. The teachers come from various countries, for example, the UAE, United States of America, the United Kingdom, Australia, Canada, New Zealand, South Africa, Egypt and Tunisia. Over 90 different programs are provided in a range of Diploma, Advanced Diploma, Higher Diploma, Bachelor Degree or Master's level, but Emirati students must first complete a foundations year prior to entering their selected program major. The seventeen HCT men's and women's branches provide a selection of instructional programs in Applied Communications, Business, Computer and Information Sciences, Education, Engineering, Technology, Health Sciences and General Education, with all these majors being instructed in English (About HCT, 2011).

The mission and the vision of HCT has shifted over the years; back in 2009 and earlier, HCT offered vocational education to student population, but in 2010 onwards the focus changed to establish Bachelor programs with international accreditations (About HCT, 2011).

A majority of high-school graduates, who apply to HCT, are academically incompetent; thus they have to complete a foundation year that consists of four levels of English preparation course (About HCT, 2011). Currently, high school students have to complete a year or two of the foundation program depending on their English proficiency and score an overall band 5 on IELTS at the end of the program to be able

to study Bachelor majors. This new change has been effective since the academic year 2010-2011.

Back in the academic year 2009-2010 and earlier, high school students had to complete one-year foundation program that was streamed into High Diploma Foundation (HDF) students and Diploma Foundation (DF) students. The HDF batch scored higher on CEPA test before entering HCT, thus they were more proficient in English and completed a more demanding foundation program than their counterparts in the DF program.

Prior to entering the foundation program in HCT, high-school students take a number of tests to determine admissions and placement . Among these tests are the three CEPA tests (CEPA reading test, CEPA writing test and CEPA math test). The word CEPA stands for the Common Educational Proficiency Assessment (CEPA) and it comprises two tests, an English test and a Math test. The National Admissions and Placement Office (NAPO), which is branch of the Ministry of Higher Education in the UAE, is responsible for the administration of CEPA (About CEPA, 2011).

CEPA-English is a two hour exam which consists of three sections: grammar and vocabulary, reading, and writing. The test is administered in two formats: paper-pencil format and computer-based format. The CEPA English test has 45 grammar questions, 40 vocabulary questions and 25 reading questions for a total of 110 questions. All the questions are multiple-choice and students are given 90 minutes to complete them. The grammar questions assess a student's ability to identify frequent grammatical functions in English and the vocabulary questions assess familiarity with frequent English vocabulary. The reading section is made up of two descriptive or narrative passages with about 400 words in length, and a non-prose text, for example a web page or a brochure, with a total of 25 multiple-choice questions in the three passages. The writing section requires students to write between 150 and 200 words. The student's writing is measured in terms of grammar, vocabulary, spelling and content (About CEPA, 2011).

CEPA Math test, on the other hand, lasts for 90 minutes and includes 50 multiple-choice items. All items are in both English and Arabic. Calculators are not permitted during the test. The test measures math proficiency in four main areas: 1) number sense, patterns

and relationships, 2) data analysis and probability, 3) geometry and measurement and finally 4) algebra (About CEPA, 2011).

CEPA English test was devised initially to place students into English courses in the first year of the foundation programs in higher education institutions in the UAE. However, since 2006 CEPA has been used to determine Emirati students' eligibility to these institutions such as HCT, the United Arab Emirates University (UAEU) and Zayed University (ZU). Each of the federal institutions follows their own admission criteria; a score of 150 on CEPA English has been broadly employed as a cut-off point, specifically in UAEU and ZU (About CEPA, 2011).

Students with a high CEPA-English score are qualified to bypass the first foundation year and enter Bachelor academic programs (4 years in length) directly. In HCT where this research was undertaken, a score of 140 on CEPA English was accepted (About CEPA, 2011). Starting 2012-2013 academic year, HCT will raise CEPA cut-off point to 150 to determine Emirati students' eligibility to its education.

In addition to CEPA tests, high-school students also take three other tests (high-school English test, high-school math test and high-school Arabic test). These tests are standardized and are administered by the Ministry of Education (MoE) which is responsible for K-12 education system in the UAE. The data of the three tests is made up of a 50% of class course work and a 50% of MoE-made mid-term and final tests. The class course work consists of teacher-made monthly tests, a project-based assignment, a homework grade and a class participation grade whereas the MoE tests, administered to all grade 12 students across the UAE, assess students' knowledge or understanding of the 12-grade textbook contents (English, Arabic and math). Math subject was instructed in Arabic in MoE system, as opposed to CEPA math test which was instructed in English in HCT system.

All in all, this study investigates the linguistic impact of 6 main proficiency and standardized tests (CEPA reading test, CEPA writing test, CEPA math test, high-school English test, high-school Arabic test and high-school math test) on student academic student, as measured by student first year GPA.

The sample population of this research includes Emirati students from the academic year 2009-2010. They are first-year foundation students, who were aged between 17-18, and who completed their first year in the Eastern Region of the UAE known as Fujairah Emirate. The Eastern Region has two branches of HCT's 17 campuses which are Fujairah Women's College and Fujairah's Men College. This research consists of a total of 471 foundation students (71 male students versus 400 female students). Each gender group is streamed into High Diploma Foundation (HDF) students and Diploma Foundation (DF) students.

1.3 Statement of the Problem

HCT uses a single standard to approve Emirati students' admission to higher education system and that standard is CEPA English test. The commonly accepted belief among the top management, based in Central Services in HCT, is that the higher the CEPA score high-school students attain, the more likely it is for them to succeed in HCT, specifically in the foundation program. CEPA English standard is purely academic and the top management fails to consider that other non-academic aspects can also be contributors to student academic achievement. These aspects can be personal background factors such as student motivation and attitude or academic background factors such as instruction quality, English language support, ability of teaching staff and cultural factors. HCT has also failed to consider the student native language proficiency as a standard of college admission.

This belief, which can be also internationally accepted by higher-education systems, results in the exclusion of Emirati high-school graduates who fail to reach the requirement of 140 CEPA score. The higher management's widespread conviction of the importance of CEPA English proficiency is a source of concern, especially for the future when HCT plans to raise the CEPA cut-off score to 150. This might make the scope of student exclusion even wider. This consequence does not comply with the country's 2021 vision for education. Thus, this research attempts to explore the correlation between CEPA English and student academic success. It also attempts to find the impact of other kinds of tests on student achievement which can be possible predictors of student academic achievement.

1.4 Purpose

This research consists of six major tests: 1) CEPA English reading test, 2) CEPA English writing test, 3) CEPA Math test (all administered by NAPO), 4) high-school Arabic test, 5) high-school math test and 6) high-school English test (all administered by MoE). The main purpose is to investigate the relationship between each of these six tests and student academic performance, measured by GPA, in HCT in the UAE. That is, this research explores the impact of 4 language proficiency tests and 2 math proficiency tests on student academic success. The researcher of this study also hopes to conclude which of the six tests is the most significant predictor of student academic performance in HCT. As a second inquiry, this research also seeks to find any academic differences between the High Diploma Foundation students (HDF) and Diploma Foundation students (DF). As a third inquiry, this research aims at investigating any academic differences between HCT male and female students.

1.4.1 Research Questions

The main three questions and sub-questions in this paper are:

- 1) To what extent do the language/math proficiency tests predict the academic performance of Fujairah College students, as measured by their GPA?
 - a) What is the correlation between English language proficiency, as measured by CEPA English reading test score, and student academic achievement, as measured by student GPA, in Fujairah Colleges?
 - b) What is the correlation between English language proficiency, as measured by CEPA English writing test score, and student academic achievement, as measured by student GPA, in Fujairah Colleges?
 - c) What is the correlation between math proficiency, as measured by CEPA math test score, and student academic achievement, as measured by student GPA, in Fujairah Colleges?
 - d) What is the correlation between Arabic language proficiency, as measured by high-school Arabic test score, and student academic achievement, as measured by student GPA, in Fujairah Colleges?
 - e) What is the correlation between English language proficiency, as measured by high-school English test score, and student academic achievement, as measured by student GPA, in Fujairah Colleges?

- f) What is the correlation between math proficiency, as measured by high-school math score, and student academic achievement, as measured by student GPA, in Fujairah Colleges?
- 2) What is the academic difference between the High Diploma Foundation (HDF) students and Diploma Foundation students (DF)?
- 3) Is there an academic difference between HCT male and female students?

1.4.2 Hypotheses

The hypotheses below are determined by the impact of 6 major tests outlined above.

- 1) There is a positive correlation between CEPA English reading test and student college GPA.
- 2) There is a positive correlation between CEPA English writing test and student college GPA.
- 3) There is a positive correlation between CEPA math test and student college GPA.
- 4) There is a positive correlation between high-school Arabic test and student college GPA.
- 5) There is a positive correlation between high-school English test and student college GPA.
- 6) There is a positive correlation between high-school math test and student college GPA.
- 7) There is an academic difference between the HDF and DF students.
- 8) There is an academic difference between HCT male and female students.

1.5 Significance of Research

The topic of this research examines the impact of both language and math proficiency on student academic achievement, as measured by GPA. The language proficiency here refers to both Arabic, the investigated students' native language, and English, the investigated students' foreign language. The interest of the topic drives from daily contact that the researcher of this paper has with the foundation students at HCT. The researcher has experienced how high-stake decisions are made based on student CEPA scores such as student entry to HCT. The researcher is interested in testing the

impact of CEPA scores on students' GPA and investigating the effect of Arabic and math proficiency in their academic success.

Further, there is a lack of research on CEPA test with regard to investigating its validity or its impact on student academic performance, despite the fact that CEPA is widely used nationwide by all federal institutions and is the decisive tool to include or exclude Emirati students in/from these institutions. This decisive tool can impact the academic future of thousands of Emirati students wanting to study at HCT yearly. The researcher hopes that this study is a threshold to an on-going research on the CEPA test. The researcher is also interested in re-examining previous studies done on the correlation between proficiency tests and academic achievement, but in the researcher's own environment.

1.6 Organization of the Research

To find out the impact of language and math proficiency tests on student academic achievement of English, quantitative research method is used in this research paper. The main and only tool involved in this research is the student raw scores of CEPA English test, CEPA math test, high-school English test, high-school math test and high-school Arabic test and student first-year GPA. The steps involved are gathering the data and analysing it using the Statistical Package for Social Sciences (SPSS) program.

1.7 Limitations

This section outlines research limitations in terms of the topic, population sample involved and the availability of literature review to support the analysis of the research findings. Firstly, this paper specifically examines four aspects English proficiency, Arabic proficiency, math proficiency and student GPA. It only examines the impact of three kinds of proficiency on student academic achievement using six tests. Also, the research is purely quantitative; thus any reasoning of the data found later in the next chapters is the researcher's own interpretation. The hypotheses are not tested using qualitative methods. Additional limitations also include the sample population investigated in this research. It is limited to foundation students in Fujairah town and does not include a population from other HCT branches. As for the literature review, the scope of the research studies found are limited as they are small-scale and were carried out at a university level or at a department-level in a university with a limited sample

size. Further, the sample population investigated in these research studies include international students (e.g. mostly Asian and African) in universities found in Australia, New Zealand, South Africa and the USA. Arab student reference in such studies is still limited.

To the best of our knowledge, no research has been ever done on CEPA, but the language proficiency tests included in these studies outlined in the literature reviews are International English Language Testing System (IELTS) and Test of English as a Foreign Language (TOEFL). The researcher assumes that the impact of IELTS and TOEFL on student academic performance, as measured by GPA, is similar to CEPA's impact as they are all proficiency tests targeted to ESL-EFL students.

Limitations of the literature review also involve the effect of the native language of students on student academic achievement. The literature covers the relationship between native language and foreign language, but does not make a direct connection between native language and overall academic success of the ESL-EFL students. Additionally, there is a limited evidence to suggest that math proficiency can contribute to overall academic achievement. The current studies only link between math proficiency and academic success in Engineering or math-related courses not to the overall academic achievement. However, the literature reviewed affirms that strong math proficiency coupled with proficiency in literacy can contribute to overall academic success.

Additionally, it is not the intention of this report to investigate the concurrent and construct validity of CEPA and high-school tests. It is beyond the scope of this small-scale research paper to investigate whether these tests accurately measure language and math proficiency. However, a predictive validity measure is used to indicate the validity of the tests. The following chapters cover literature review, research methodology, research findings, research analysis, research discussions, a conclusion and a list of recommendations.

Chapter 2: Literature Review

This chapter is developed in seven stages:

2.1 Proficiency

2.2 Native Language Proficiency

2.3 English Proficiency Tests

2.4 Mathematical Proficiency

2.5 Academic Success Factors

2.6 GPA

2.7 Gender as an Intervening Variable

2.1 Proficiency and Language Proficiency Tests

Research shows inconclusive findings of the relationship between English language proficiency and academic achievement in a university level, however, some evidence reveals that poor levels of language proficiency becomes a significant influence in determining student achievement. Further evidence also suggests that student attitude and educational capacity play as intervening influences (Light et al, 1987).

As described earlier, language proficiency is one of the least agreed upon terms in language testing. However, despite conflicting theoretical opinions as to what constitutes language proficiency, numerous educators agree on the fact that proficiency examines the students' capacity to use language. Brière (1972) stated that the boundaries of language proficiency are difficult to recognize. Brière outlined that "the term 'proficiency' may be defined as the degree of competence or the capability in a given language demonstrated by an individual at a given point in time independent of a specific textbook, chapter in the book, or pedagogical method" (1972, p.332). Clark (1972), on the other hand, terms proficiency as the student's capability to employ language in realistic contexts regardless of approach that capability was learned. Therefore, the proficiency in this reference deviates from the classroom context to the authentic context where the language is actually employed.

In addition, based on a language learning theory, English language is known to be improved through a process. This process requires the acquisition of a range of components such as grammar, vocabulary and phonology which contribute to language acquisition that can be then utilized in different situations (Gee, 2008). In line with this statement is the argument that when language learners attain a particular level of mastery in the English language, learners should be capable of employing their language effectively in any English language setting with little struggle. Nevertheless, different opinions of language proficiency propose that along with the acquisition of the linguistic skills in different components, effective language learning indicates the capacity to use them and therefore to communicate and fully participate in different cultural environments. This suggests that the stress is not only on the familiarity with language, but also on the capacity to employ that language for a range of purposes. This socio-cultural perception of English language learning (Norton, 2006) views language as inextricably linked with the settings of its usage and suggests that English language proficiency has various purposes within various settings.

With the poor attempts to reach an agreement on the definition of proficiency, it is expected that proficiency assessments might have more complexities than other kinds of language assessments. This may be attributed to the slow development in language proficiency tests. One of the fundamental issues with the definitions above, among others, is that none of them involves tester traits which can be a possible aspect in language testing. Theoreticians and educators believed that the content and means learners learned through are unrelated to language proficiency (Farhady, 1980).

It has been shown that learners from various educational environments have particular strong and weak aptitudes in various linguistic aspects (Farhady, 1980). Because of the institutional policies in the learners' native countries, they have a range of views and beliefs of language. These learners are even different in their personal motives to learn a language in their academic and social settings. There are numerous factors which current proficiency tests fail to offer data such as students' familiarity with test kinds and questions, their linguistic strengths and weakness, their familiarity with language pragmatics, the learning goals of language courses learners take, and the significance

of these goals to the learners' academic as well as social settings. These factors are not incorporated into the development of language proficiency assessments; therefore these assessments necessitate a re-consideration (Farhady, 1980; Hisama, 1978). Test takers need to be aware of the content the tests gauge; test expectations, learners' characteristics (Farhady, 1980). Farhady (1980) also affirms that language proficiency does not operate in one direction only and that students are not equally proficient when it comes to the various linguistic aspects. Hence, the function of a test is to assess a multi-dimensional student population and should be multi-functional so as to meet the requirements of a test.

2.2 Native Language Proficiency

Abundant resources of research have concentrated on the development of the second language and student educational achievement, yet the discussion still continues on how first language development can promote second language acquisition.

Previous studies, which involved large samples of bilingual immigrant learners, suggested that bilingualism led to "mental confusion"(Darcy, 1953). This belief was common in the early decades of the twentieth century. Today, researchers realize the methodological mistakes occurred while carrying out some of the early research on bilingualism.

For instance Diaz (1985) quoted statements from researchers such as Peal and Lambert who have found a positive correlation between bilingual learners and their cognitive competency. Their statements shatter common negative beliefs of bilingualism. Diaz accredited the positive correlations to the two researchers' sample that consisted of learners who shared common and age-suitable competencies in two languages. This methodology was not commonly used in early studies.

Additional methodological mistakes also included failures by early researchers to distinguish between the various levels of bilingualism (Hakuta, Ferdman & Diaz, 1986). In line with today's researchers, if a study aims at finding a correlation between bilingualism and its impact on learners' cognitive ability, then the term bilingualism should be defined according to learners' abilities in two languages. Moreover, early

studies defined the term in relation to its societal perspective, stressing on the verbal language ability. These early studies represented results of all Hispanic children with low socio-economic status. In contrast, current research has viewed bilingualism in terms of cognition stressing on levels of linguistic competency, for example cognitive and academic language competency. Recent research has shifted its attention to the wide cognitive language development amongst all learners. A considerable amount of research has showed a positive relationship between bilingualism and reasoning competencies amongst children, for instance non-verbal problem solving skills and field independence (Cummings, 1976).

Further, studies have pointed out that bilingual learners surmount monolingual learners on assignments involving high levels of cognitive competency (Bialystock, 1986). Additionally, group analytical reports have showed outstanding non-verbal competency among bilingual learners who were registered in Spanish-English primary education courses (Hakuta, 1987). Results highlighted that competent bilingual learners outperform monolingual learners in the fields of cognitive development, school success as well as language awareness (Cummins & Mulcahy, 1978).

A further significant issue about bilingualism is the extent of literacy in the primary and acquired languages among bilingual learners, as indicated by Cummins (1992). Cummins's research has indicated that literacy attainment in the first and second language is mandatory so as to reach the cognitive abilities desired in bilingual children. According to a research study carried out on minority, majority, and special-need population samples, researchers have confirmed that literacy is a key contributor to educational achievement. For instance, Westby (1984) affirmed that literacy among learners facilitates accumulation of more information faster than being proficient in oral language only. Further, language programs must be carefully selected for different student groups with different needs, but they should concentrate on learning that helps acquire basic language structures, functions, and verbal language skills (Westby, 1985).

Skutnabb-Kangas and Toukoma (1979), founders of the developmental interdependence theory, suggested that a skill development in one language can be observed in a matching development of the same skills in a second language. This

corresponding development of language is accredited to the success of bilingual programs, which concentrate their education in the second and the native language of learners. These programs showed that language minority learners do not display educational failure as the oral abilities in the second language are acquired. Studies, therefore, propose that the native language growth has no negative impact on the educational or cognitive development of learners.

Equally, studies have proposed that the more proficient the learner's native language is, the more possible she or he is to enhance conceptual skills in the acquired language (Cummins, 1992). Further, researchers such as Ramirez, Yuen, Ramey, and Pasta (1991) pointed out that learners with stronger first-language proficiency outperform their counterparts in English literacy skills, especially reading. The findings also revealed that development of the native language enable learners to "catch up" to the success level of the same population.

Cummins (1992) also revealed a research study that entailed language minority students who displayed lower educational performance in a school with higher English instruction hours. Cummins outlined that the more English instruction a bilingual learner obtains, the lower the educational attainment is in the acquired language. Cummins (1992) stated that "the bulk of evidence suggests that there is an inverse relation between exposure to English instruction and English achievement for Latino students in the United States" (p. 98).

Researchers, who support the implementation of bilingual programs, depend on three standards: 1) sustained growth of both languages to develop the academic and cognitive development, 2) literacy-based skills embedded in two languages as the acquisition of these skills in the mother tongue language contributes to their availability in the second language and (3) the academic skills of an acquired language requires about five years to develop while the oral skills develop fast ability and literacy skills (Romaine, 1995). Based on the research statements outlined above, researchers have found that the cognitive academic abilities of a native language and the acquired language are inter-reliant. Therefore, the growth in the proficiency of the acquired

language is partly a consequence of the degree of proficiency of the native language (Fishman, 1976; Swain, 1979 & Cummins, 1979).

On the notion of being literate in reading in both native and second languages, Hudson (2007) asserted that effective reading in the second language involves both reading skills and reading strategies. Reading skills involve a less complex procedure, such as identification of vocabulary meanings, grammatical constructions, word class, underlining, summarizing and making inferences or using previous knowledge, with limited realization and exertion.

Strategic reading, on the other hand, as Hudson (2007) argues is deliberate and intended which makes learners intentionally use when they read to accomplish a reading objective. Strategic reading is indicated through the employment of reading strategies and self-regulatory strategies that involve a variety of cognitive tactics (for example making inferences, translating, employing previous knowledge), meta-cognitive tactics (for example planning, monitoring and assessing) and emotional tactics (for example affective and motivation control). A number of studies in the first language reading approaches (Kintsch, 1998) and second language reading approaches (Hudson, 2007) have revealed that correct employment of reading strategies assists in effective reading comprehension performance. Recent studies on second language reading approach have showed that strategic reading is a result of a high-level system of digesting information starting from memorizing, recovering, and grasping information to effective controlling of these strategies (Hudson, 2007).

2.3 English Proficiency Tests

This research paper concentrates on the linguistic factors that impact performance by examining English and Arabic proficiency tests and their effect on academic achievement, as measured by GPA. Research papers viewed mostly used IELTS as a proficiency test. IELTS stands for the International English Language Testing System. It is the most common and most employed tests in determining English proficiency in universities worldwide. Research shows various conclusions regarding the correlation between the two variables. Numerous research papers indicated a weak positive correlation between IELTS and GPA (Hill et al, 1999; Cotton and Conrow, 1998;

Kerstjens and Nery, 2000). A common regression coefficient of about 0.3 was typical in most of these studies. Nonetheless, Hill et al (1999, p. 55), who carried out their research in the University of Melbourne, affirmed that the "relationship between Grade Average and IELTS score was found to be moderately strong ($r = 0.540$)". Further, Hill et al (1999, p.55) explained that "an examination of the various scatter plots suggested a violation of certain assumptions of the regression model".

In a different context at the University of Tasmania, Cotton et al (1998, p. 98) showed a weak, but a positive relationship between reading and writing subtest in IELTS exam and performance whereas other subtests showed a low and negative relationship. Equally well, Kerstjens et al (2000) indicated a small impact between IELTS and college achievement. Additionally, English linguistic competency was the most influencing indicator in academic performance, scoring around 10% of the variance of performance measures at Hong Kong University (Ho and Spinks, 1985).

Other research papers, however, showed no significant association between IELTS and GPA (Traynor, 1985; Graham, 1987; Gibson and Rusek, 1992; Rusek, 1992). Further, a research undertaken by Dooley (1999) found uncertain conclusions suggesting that students who scored less than 6.0 in IELTS were able to pass while other students who scored higher than 6.0 in IELTS failed at Curtin University.

Additionally, an interesting research, carried out in New Zealand and comprised a broad range of IELTS scores including lower than IELTS 5.0, found a moderate correlation (Bellingham, 1993). Bellingham (1993) suggested that students scoring lower than 6.0 have a 20% opportunity to succeed while students scoring 6.0 or more have a 50% opportunity to succeed. The Bellingham research also discussed in detail that language competency is not the only conclusive variable to determining successful academic achievement.

In addition, a comprehensive analysis of a research study addressed the employment of native and second languages in educational institutions, undertaken for the World Bank (Dutcher, 1994 cited in Tucker, 1999) and studied three various kinds of countries: 1) students with no (or little) broad literacy and communicative skills in the native language

(for instance, Haiti, Nigeria, the Philippines), 2) students with some broad literacy and communicative skills in the native language (for instance, Guatemala) and 3) students with broad literacy and communicative skills in the native language (for instance, Canada, New Zealand, the United States). The conclusion of the research was that academic achievement in school heavily relied on the learner's mastery of cognitive or academic language, which was extremely different to the social or communicative language practiced at home (Dutcher, 1994 cited in Tucker, 1999).

Further, Graham (1987, p. 505), who studied the correlation between English language proficiency and academic attainment, confirmed that "while the research clearly shows that many factors other than English proficiency are important to academic success, there may be for each institution, or even for each program, a minimum level below which lack of sufficient proficiency in English contributes significantly to lack of academic success".

In addition, results in a research study carried out by Saville-Troike (1984), who studied samples of student individuals aged between 6-11 years old, indicated a positive high correlation between vocabulary knowledge and academic achievement. However, Saville-Troike (1984) affirmed that morphological knowledge and communicative competencies of the learners did not associate with their academic achievement. Surprisingly, communicative competencies showed negative correlations with it.

In the research study carried out by Light et al (1987 cited in Robinson 1991) a low correlation was seen between scores of the language test (The Test of English as a Foreign Language (TOEFL) and students' GPA. They indicated that criteria including teachers' assessment and learners' opinions of their personal achievement should be studied. In Low and Lee's research study (1985 cited in Robinson 1991), content area teachers constructed and employed a survey to document their opinions on the language content of students' tasks. These opinions were afterwards correlated with the students' first language test scores. Significant correlations were observed, but Low and Lee were very careful about relying on this.

Researchers such as Gibson and Rusek (1992) revealed that conflicting and inconclusive findings do not question the validity of IELTS exam, but that the linguistic competency is not the only predictor of academic achievement although it is a significant predictor. Their research also suggested that each university should undertake its own study to decide on the appropriate English language level according to student's past academic history.

In more recent research papers done on the topic of IELTS and academic success and were carried out in 2001, 2002 and 2006, researchers asserted the positive association between the two variables. For instance, Huang (2001) aimed at finding the association between IELTS scores and academic success among 202 Vietnamese students studied in 29 different universities in Australia through a survey. In this research, Huang standardized the GPA to analyze the data because the 29 universities used different marking schemes. Huang revealed a positive relationship of 0.34 ($p < 0.05$; $r^2 = 0.12$) in the first semester and 0.31 ($p < 0.05$; $r^2 = 0.10$) in the second semester. Huang also revealed that high IELTS scores in listening and reading subtests were linked with high academic achievement in both semesters (correlation coefficients starting from 0.31 to 0.37 in the two variables). The researcher investigated more by using a structural equation modeling (SEM) method. Huang (2001) revealed a path coefficient of 0.32 ($r^2 = 0.10$) from IELTS achievement to academic achievement. All in all, Huang (2001) concluded that roughly 10% in the shared variance between English language competency and academic success. The following year, Feast (2002) studied the same correlation amongst 101 foreign students at the University of Southern Australia. Feast (2002) used multiple regression analysis and revealed a positive correlation between IELTS performance and academic achievement (regression coefficient of 0.39, $p < 0.05$; $r^2 = 0.15$). She also added that a positive correlation was found between the study level and academic achievement (regression coefficient of 0.79; $r^2 = 0.62$).

In the most recent research done on the issue of IELTS and academic success, Woodrow (2006) studied the association between the two variables (IELTS and GPA) amongst 62 foreign post-graduate students at the University of Sydney. Likewise, Woodrow (2006) used a survey that revealed a positive relationship between IELTS

performance and academic achievement ($r = 0.40$; $p < 0.01$; $r^2 = 0.16$). Woodrow (2006) specifically outlined a correlation of 0.52 ($r^2 = 0.27$) between IELTS band 5 and 6.5 and academic success; however, he did not come up with any significant association between IELTS band 7 or above and academic achievement. This result, Woodrow (2006) asserted, indicates that English language competency is vital to academic success, especially in the lower end of a college entry requirement.

On the other hand, another proficiency test was examined to validate the argument on the relationship between English language proficiency and academic success. TOEFL is another internationally well-known English proficiency test besides IELTS. Al-Musavi and Al-Ansari (1999) evaluated the predictive validity of TOEFL and student grade point average (GPA) used as a criterion for academic achievement. They found high correlations between the two variables. They also documented that grammar subtest of the TOEFL test has the strongest influence on the scores of student GPA.

Heil and Aleamoni (1974) also revealed significant associations between TOEFL and GPA, despite the fact that the associations were not strong ($r = 0.270$ first-semester GPA and 0.336 second-semester GPA). The researchers concluded that the TOEFL was helpful in indicating academic achievement for non-native English speakers just like other proficiency tests are for native speakers of English.

In a different research, consisted of 154 first-year international students, that aimed at finding the predictive significance of the TOEFL at Oklahoma colleges and universities for first-year students, Bostic (1981) revealed significant, but not highly positive associations ($r = .169$) between TOEFL scores and GPA. An interesting point was found in this research. The researcher examined the correlation between the TOEFL and both language-based major programs and scientific-based major programs. He revealed significant positive relationships with the scientific-based programs GPA ($r = .50$), but not with the language-based programs GPA ($r = -.08$).

In contrast, the University of Arizona conducted a research that included 159 undergraduates and graduates (Stover, 1982). TOEFL scores were employed in a foundation program (pre-university English program). Contradictory results were found. Both undergraduates and graduates with TOEFL scores of lower than 500

accomplished a satisfactory level in their first semester. Nevertheless, as the TOEFL scores and the GPAs in the foundation program were highly associated to academic achievement with undergraduates ($r = .21$, $p = .05$), the scores were not significant with graduate students ($r = .13$).

The conclusion drawn by examining the literature on both IELTS and TOEFL is that the relationship between English proficiency and academic achievement does not disclose clear-cut findings for the ESL educator who is in search for assistance in making decisions about student admissions.

2.4 Mathematical Proficiency

Standard-based assessment is the worldwide tendency to the assessment of mathematic performance. The necessary standards are evaluated through the use of proficiency tests. Vollmer (1981, p. 152) defines proficiency as “proficiency is what proficiency tests measure”. Whitehurst (2003), on the other hand, defines proficiency as the capacity to perform the required cognitive processes. The definition of mathematical proficiency was expanded from the capability to perform computational calculations essential to solve mathematical problems, to the capability to comprehend mathematical concepts, to relate math to novel problems, and to use reasoning mathematical skills. Current mathematics reforms have stressed on the development of understanding mathematical concepts more than on the excellence of math facts (Whitehurst, 2003).

Mathematics proficiency involves the following elements: 1. conceptual understanding (understanding mathematical concepts and relations), 2. procedural fluency (skills necessary to perform procedures accurately), 3. strategic competence (ability to solve math problems), 4. adaptive reasoning (ability used for logical thinking and justification) and 5. productive disposition (tendency to view math as useful in addition to a conviction in one’s efficacy (Whitehurst, 2003).

As for the math proficiency assessment, it aims at assessing a person's background in a given area of knowledge with or without relating it to certain academic learning (Sestic and Huttunen, 2006). Sestic and Huttunen (2006) state that the purpose is not to rank

students in certain orders, but to evaluate what a learner can do, how many skills she/he can put to use, how well she/he relate their knowledge to the actual life.

In a defense of the role of mathematical proficiency and later academic success, Greg Duncan and his fellows carried out a study that consisted of around 20,000 kindergarten students to evaluate their background knowledge of mathematics, literacy and other skills such as attention-span competence and social skills (cited in Duncan et al, 2007). The study tracked the students for a number of years through elementary school while assessing their reading and mathematics (cited in Duncan et al., 2007). After a consideration of the differences in IQ and parents' socio-economic status, Duncan revealed that students with the greater math competency mastered in kindergarten had a tendency to acquire higher mathematical and reading scores years later (cited in Duncan et al, 2007).

Further, in research studies that deal with tertiary-level students, similar positive reactions were observed between the knowledge of math and academic achievement. For instance, Wilcox (1975), who carried out a study consisting of international undergraduates, found significant relationships between high school GPA scores and academic achievement (around .50), mathematical ability and academic achievement (around .50), but he also found that a combination of mathematical ability and high school GPA scores resulted in a slightly higher academic achievement (around .60) (cited in Graham, 1987).

Similarly, in another study carried out by Graham (1984) at the University of Maryland revealed that for the non-native speakers of English, at the Baltimore County campus, math SAT scores and high-school GPA scores were the best indicators of academic success. SAT is an American standardized test taken for university admission.

2.5 Academic Success Factors

As seen above, the linguistic variable can have a significant impact on student college success, but researchers widely accept the notion of other influencing variables such as personal variables, context-related variables, student support variables and cultural-related variables. Feast (2002) reveal that personal variables can be age, gender, student personality, attitude and student self-motivation toward learning whereas

context-related variables can be student past learning experiences in certain environments. Teaching and student support systems can include the quality or competency of teachers, language preparation or support programs and student advice bodies. Moreover, financial and family problems can contribute to college success or failure as well. In general, the lower the socio-economic status is, the more likely a student to fail or drop out. Students with educated parents indicate to be more successful or possess more survivability likelihood (Brawer, 1996). All in all, other intervening factors contribute to student academic achievement, however it appears that the language and culture stand out in literature as Hill, Storch and Lynch (1999, p. 63) declare "nobody would argue that ELP [English Language proficiency] has no role to play in academic achievement".

2.6 GPA

GPA (Grade Point Average) is the most widely used standard for academic achievement. A research study, that consisted of 2,075 international students at the University of California, Los Angeles (UCLA), revealed that first-semester GPA was "the best index of the student's eventual success" (Sugimoto, 1966, p. 50). In countries such as the United States of America, GPAs are considered as an outstanding predictor of successful academic performance (Jones, 1990). In Europe, Van Overwalle (1989) and in England, Johnes and Taylor (1980) revealed that GPAs are the most significant predictor of future academic achievement.

Some researchers, however, indicated that GPA is not a significant reliable predictor of successful academic performance. For instance, Heil and Aleamoni (1974) indicated that GPA does not consider the number of courses studied. GPAs may only reflect two courses taken by students are able to cope with a few courses because of poor English competency. Heil and Aleamoni (1974) also noted the commonly acknowledged issue of teachers being sympathetic or passing goodwill marks to international students. Additionally, in graduate programs, a further issue can be the restricted spread of marks which suggests that significant associations are less expected to be seen. Ho and Spinks (1985, p. 258) assert that grade point averages are "composed of heterogeneous or divergent elements" particularly at the tertiary level, where "various academic subjects demand divergent competencies or dispositions". For instance,

some learners might be talented at rational argument, which can be an advantage in one course, and a lack of math competency can be a disadvantage in another course.

2.7 Gender as an Intervening Variable

Another interesting issue examines the relationship between gender and its impact on student academic achievement. For instance Pajares and Valiante (2002, p. 20) remarked that "in areas related to language arts, male and female students exhibit similar confidence even though the achievement of girls typically is higher". Further, Machin and McNally (2006) examined the issue of gender academic differences according to the 2004 national statistics which found that females outperformed males in learning English language. Similarly, a research paper, which was carried out in Turkey by Dayioglu and Turut-Asik (2004), echoed the same findings; female undergraduate students academically performed better than their counterparts. In the same country at the Civil Aviation School, another researcher named Ergul (2004) further investigated the issue by examining the correlation between student traits and their academic performance, but found no significant relationship between the two variables.

In a study that is more related to this region, Morgan (2008) cites a finding declared by UNESCO in 2002. The finding shows that 37% of Emirati female students completed their higher education compared to only 13% of Emirati male students who sought a college diploma. The researchers attributed the declining interest in tertiary education among men to stimulating job offers, especially at the civil defence sectors (police force and military), that do not require university degrees.

However, some research cases have revealed the poor performance of women accrediting it to extrinsic causes that hinder the academic aspirations of women (Leppel, 2002). Moreover, Ting and Robinson (1998) added that inequity can contribute to female academic underperformance.

A side from research studies, theoretical literature has documented several causes to overall student academic performance. Theories ascribe one's performance to self-regulatory skills which are partly dependent on beliefs learners hold about themselves. These beliefs refer to student perceptions of their ability to achieve a task or

successfully complete an activity or what Bandura names self-efficacy (cited in Pajares, 1997). The use of self-efficacy is intuitive. Learners get involved in a behavior, interpret the consequences of the actions and employ the interpretations to further build up beliefs about their ability to get involved in later behaviors in similar tasks. Academically, this means that learner academic accomplishments are partly a consequence of what they believe they have achieved and can achieve. This helps justify why learners' academic accomplishments are different noticeably when they possess similar capabilities (cited in Pajares, 1997).

Further, researchers have revealed that learners' self-efficacy learning is associated with motivation and performance in academic fields such as language arts, mathematics, and science. Learners' self-assurance in their self-regulated learning strategies is associated with their school self-concept, self-efficacy, significance of learning, especially school subjects, success goals, and academic achievements (cited in Pajares, 1997).

Chapter 3: Research Methods

3.1 Preambles

The primary focus of this research paper is to examine the relationship between six different proficiency tests and student academic performance, as measured by GPA. As a secondary focus, this paper also seeks to find any academic differences between High Diploma Foundation students (HDF) and Diploma Foundation students (DF). Additionally, the paper examines the academic difference between HCT male and female students. The literature reviewed indicates that quantitative research is adequate to find answers to the above inquires. Early research was done in the past forty years and solely studied the impact of IELTS and TOEFL on student academic students. Research on CEPA test has not attempted yet or has not been released by academic officials for public review. Hence, the researcher of this paper assumes that the impact of CEPA test on student performance is similar to the effect of IELTS and TOEFL. The researcher of this paper will support the findings of this research based on research done on IELTS and TOEFL. The main form of data was collected is student scores:

CEPA reading scores, CEPA writing scores, CEPA math scores, higher school English scores, high school Arabic scores, high school math scores and first-year GPA.

3.2 Research Design and Data Collection Methods

This is a descriptive cross-sectional study that is different in the variable of interest; however the participants share other characteristics such as age, educational background, race, language and ethnicity. This study is solely quantitative and involves parametric data. Three main methods were used to seek answers to the questions: a regression analysis, correlations and independent T-test. "Regression analysis refers to a broad class of statistical techniques that are designed to study the relationship between a criterion (or dependent variable, Y, and one or more predictors (or independent variables), X1, X2,.."(Tatsuoka, 1997, p. 648). Similarly Brace, Kemp and Snelgar (2009) define multiple regression as "a statistical technique that allows us to predict someone's score on one variable on the basis of their scores on several other variables" (p 206). In other words, regression analysis is a necessary tool to begin with to indicate if a relationship exists between the independent variables and dependent variables. Additionally multiple regression analysis is needed as this research entails more than two variables and it aims at examining which of the variables is the most significant predictors of student academic success.

In this research, the dependent variable is the academic performance of HCT students in Fujairah as measured by GPA. Student GPA consists of overall English, Arabic, math and computer (IT skills) scores. The key independent variables are CEPA reading scores, CEPA writing scores, CEPA math scores, high school English scores, high school Arabic scores and high school math scores. These scores are also known as interval variables. Other intervening variables found in this research are gender and English level (High Foundation Diploma and Foundation Diploma students) which are also known as categorical variables. The sample population of the research is all Emirati students aged between 17-18, so age and nationality are not significant factors that can impact the findings.

The second tool implemented is correlation which tests the degree of relationship between the variables. The correlation analysis was performed using a method to

calculate correlation coefficients for parametric data called Pearson's Product Moment Correlation Coefficient (Pearson's r) (Brace, Kemp and Snelgar, 2009).

The third tool used in the research is the independent t-test. The t-test measures whether the means (averages) of two groups are statistically different from one another (Brace, Kemp and Snelgar, 2009). The independent t-test is used as the researcher has compared the means of two independent groups: 1) male and female student scores and 2) High Diploma Foundation and Diploma Foundations students.

3.3 Research Population and Sampling

The participants of this research are HCT students who studied in Fujairah campuses in the academic year 2009-2010. They all completed high school education and took CEPA test to determine their English proficiency. High school students who score between 140-159 on CEPA were admitted to DF program whereas students who score 160 and above on CEPA were admitted to HDF program. As mentioned earlier, HDF program was more academically demanding than the DF program. Both groups in the two programs took a whole academic year (two semesters; each semester lasted about four months) to complete the foundation program. The students learned general English, Arabic, mathematics and computer (IT skills) in the foundation program. By the end of the second semester, student GPA was calculated. GPA is used in this research to indicate the student academic achievement.

This research consists of a total of 471 foundation students (71 male students versus 400 female students). Each gender group is streamed into HDF and DF. They are all Arab Emirati students aged between 17 and 18. They were taught by multinational HCT instructors.

3.4 Instrument

The instrument utilized in the this research is the participants' academic scores that included information such as academic level, gender, age, CEPA scores, high school scores and GPA (see Appendix 1). Instrument is a general term that is used by researchers to measure a device such as survey, questionnaire, test, etc. Instrumentation, on the other hand, is the process of developing, using and testing the device. Instruments can be grouped into researcher-completed and subject-completed.

Research-completed refers to instruments administered by researchers such as rating scales, tally sheets and observation forms whereas subject-completed refers to instruments completed by participants such as questionnaires, attitude scales and achievement or aptitude tests (Brace, Kemp and Snelgar, 2009).

3.5 Validity and Reliability of the Instrument

An instrument can be valid when it measures what it is intended to. Reliability is achieved when an instrument yields consistent results (Bell, 1999).

There are numerous types of validity: face validity, content validity, criterion validity and construct validity. Firstly, face validity refers to an instrument that appears to measure what it is purported to measure. It can be low face validity when the researcher is concealing purposes. Secondly, content validity refers to the items on an instrument that denote the entire variety of potential items the instrument should cover. Thirdly, criterion validity refers to an instrument when it is consistent with the expectations. Two sub-types that emerge are predictive and concurrent validity. Predictive validity predicts a relationship between the construct being measured and something else whereas concurrent validity is related to pre-existing predictors; a variable that measures the same concept. Fourthly, construct validity indicates that the instrument is associated with a range of other measures as indicated in a theory (Bell, 1999).

As for reliability, there are also numerous types: inter-observer, test-retest, parallel-forms and split-half reliability. Inter-observer refers to the consistency of the results among test-takers who are assessed on the same content. Test-retest refers to an instrument that is taken at two different times by test-takers with a short time-frame in between and can produce similar results. Parallel-forms refer to two instruments with different versions that measure the same content and produce similar results. Split-half reliability refers to the items divided in half (for instance odd versus even questions) and the two halves produce similar results (Bell, 1999).

There are factors that can impact the validity of research instruments. For example, during the course of an experiment, dependent variables may influence the outcomes. Additionally, maturation or changes occurred because of aging or development within research participants. Also, during taking tests, the reliability of instruments might be

affected due to fatigue or experience, etc. Further research participants are somewhat different in their aptitude. That is, they respond in various ways to the independent variable (Bell, 1999).

It is not the intention of this report to investigate the concurrent and construct validity of CEPA and high-school tests. It is beyond the scope of this small-scale research paper to investigate whether these tests accurately measure language and math proficiency.

However, predictive validity is used to measure the validity of the 6 main tests used in this research (CEPA reading test, CEPA writing test, CEPA math test, high-school English test, high-school Arabic test and high school math test). The following chapters explain the findings in detail. As Young (2004, p. 290) indicates that:

The most common statistical approach for validating an admissions test is to estimate validity coefficients and regression equations. . . . Most validity studies in college admissions examine the correlation between the predictors available at the time of application (high school GPA and test scores, such as the SAT) and freshman college GPA.

The researcher of this paper presumes that due to considering CEPA tests as standardized tests administered to students country-wide, validity and reliability were achieved. Additionally, the high-school tests were also administered to a vast majority of students country-wide; hence they are valid and reliable instruments.

3.6 Generalizability of the Instrument

A key dimension of external validity is the process of generalization. Generalization indicates whether results (behaviors) received from a small sample group can be expanded to predict similar results of the entire population (Campbell and Stanley, 1966). Further, Campbell and Stanley (1966) suggested a definition of external validity which "asks the question of generalizability: To what populations, settings, variables and measurement variables can this effect be generalized?" (p. 175).

In this research, there is a high population validity because the researcher took a random group selection and employed a large sample size (471 students) leading to a meaningful statistical analysis. In addition, the common characteristics (for example country of origin, student mother tongue, all foundation students, the same area of specialization and the same design of study) shared within the sample group help generalize the findings of this research study. Graham (1987) argues that the diversity of factors shared by research study subjects influence the findings of prediction studies. She states that not only do variables such as these impact the findings of the research studies, but they also limit the generalizability and make direct comparisons problematic.

3.7 Data Preparation

The research data (students' scores) was obtained from Fujairah College management who gave access to the data after filling out forms (see Appendix 2). The data received was saved in an Excel file and categorized according to gender, enrollment day, student ID, student academic level (HDF or DF), CEPA English reading scores, CEPA English writing scores, CEPA math scores, high-school English test, high-school Arabic test and high-school math test and GPA. The data was then exported to the Statistical Package for Social Sciences (SPSS) software for analysis and interpretation.

3.8 Ethical Considerations

Ethics represent the beliefs a person should do (Robson, 2002). Bell (1999) values researcher's ethics and state that they cannot be exempt from abandoning ethics at all times. Hart (2005) specified main ethical guidelines to be taken into account before carrying out research.

1. Honesty: to evade statements that might be regarded as vague, wrong, or misleading and be fair, respectful, and truthful to participants involved in the research or others. The researcher of this paper did not employ any misleading statements in an attempt to reach desired results.
2. Ensure confidentiality and people's rights. The researcher of this paper ensured that the data obtained was confidential and identity of participants was concealed.
3. Release the findings of the data to the public for society's benefit

(HCT management requested to keep data confidential and provide a soft copy of the research to the management to be kept in its database).

4. Grant approval: official consent from HCT management was obtained after completing forms (see Appendix 2).

Chapter 4: Data Analysis

This chapter is designed to answer the research questions based on the data obtained.

1) To what extent do the language/math proficiency tests predict the academic performance of Fujairah College students, as measured by their GPA?

4.1 Regression Analysis

Using the regression analysis method, table 4.1 shows that the adjusted r square value in our model accounts for 42% of variance in GPA – respectable model. This suggests that language proficiency accounts for 42% of the variance in students' GPA, whereas the remaining 58% are explained by other factors (for instance family socio-economic status, family support, student motivation, student aptitude and determination). More analysis is provided in the following chapter.

Table 4.1 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.656 ^a	.430	.420	.74445

a. Predictors: (Constant), High School Arabic Score, gender, CEPA writing Test Score, High School math Score, CEPA reading Test Score, CEPA math Score, academic Level , High School English Score

Table 4.2 reports an ANOVA, which assesses the overall significance of our model. As $P < 0.05$ our model is significant.

Table 4.2 ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	193.356	8	24.170	43.611	.000 ^a
	Residual	256.045	462	.554		
	Total	449.401	470			

a. Predictors: (Constant), High School Arabic score, gender, CEPA writing Test score, High School math score, CEPA reading Test score, CEPA math Test score, academic Level , High School English score

b. Dependent Variable: GPA

Table 4.3 indicates that using the enter method, a significant model emerged ($F(8,462)=43.611, p<0.0005$).

Table 4.3 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-7.650	.643		-11.889	.000
	gender	-.552	.104	-.202	-5.313	.000
	academic Level	-1.460	.111	-.747	-13.159	.000
	CEPA reading Test Score	.042	.004	.525	9.670	.000
	CEPA writing Test Score	.141	.037	.162	3.801	.000
	CEPA math Test Score	.020	.003	.287	6.140	.000
	High School English Score	.014	.007	.129	2.052	.041
	High School math Score	-.003	.003	-.035	-.895	.371
	High School Arabic Score	.026	.006	.241	4.253	.000

a. Dependent Variable: GPA

Table 4.4 shows that the adjusted R Square = 0.420. Significant variables are indicated. High School math score was not a significant predictor in this model. Hence it was not considered when using correlations.

Table 4.4 Significant Variables

Predictor variable	Beta	P
Gender	-0.202	P<0.0005
academic Level	-0.747	P<0.0005
CEPA reading Test Score	0.525	P<0.0005
CEPA writing Test Score	0.162	P<0.0005
CEPA Math Test Score	0.287	P<0.0005
High School English Score	0.129	P<0.05
High School Arabic Score	0.241	P<0.0005

4.2 Correlations

This section is designed to investigate the correlation between each test and student GPA. Correlation for each test is illustrated in separate tables. Using a method of calculating correlation coefficients for parametric data called Pearson's Product Moment Correlation Coefficient (Pearson's r), table 4.5 shows that there is a significant positive correlation between CEPA English reading test and student GPA ($r = 0.390$, $N = 471$, $p < .0005$, two-tailed). It is a fairly medium correlation: 42% of the variation is explained.

Table 4.5 Correlation

		GPA	CEPA Reading Test Score
GPA	Pearson Correlation	1	.390**
	Sig. (2-tailed)		.000
	N	471	471
CEPA reading Test Score	Pearson Correlation	.390**	1
	Sig. (2-tailed)	.000	
	N	471	471

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

Table 4.6 shows that there is a significant positive correlation between CEPA English writing test and student GPA ($r = 0.273$, $N = 471$, $p < .0005$, two-tailed). It is a fairly medium correlation: 42% of the variation is explained.

Table 4.6 Correlation

		GPA	CEPA Writing Test Score
GPA	Pearson Correlation	1	.273**
	Sig. (2-tailed)		.000
	N	471	471
CEPA writing Test Score	Pearson Correlation	.273**	1
	Sig. (2-tailed)	.000	
	N	471	471

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

Table 4.7 shows that there is a significant positive correlation between CEPA math test and student GPA ($r = 0.308$, $N = 471$, $p < .0005$, two-tailed). It is a fairly medium correlation: 42% of the variation is explained.

Table 4.7 Correlation

		GPA	CEPA Math Test Score
GPA	Pearson	1	.308**
	Correlation		
	Sig. (2-tailed)		.000
	N	471	471
CEPA Math Test Score	Pearson	.308**	1
	Correlation		
	Sig. (2-tailed)	.000	
	N	471	471

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

Table 4.8 shows that there is a significant positive correlation between high-school English test and student GPA ($r = 0.312$, $N = 471$, $p < .05$, two-tailed). It is a fairly medium correlation: 42% of the variation is explained.

Table 4.8 Correlation

		GPA	High School English Score
GPA	Pearson Correlation	1	.312**
	Sig. (2-tailed)		.000
	N	471	471
High School English Score	Pearson Correlation	.312**	1
	Sig. (2-tailed)	.000	
	N	471	471

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

Table 4.9 shows that there is a significant positive correlation between high-school Arabic test and student GPA ($r = 0.325$, $N = 471$, $p < .0005$, two-tailed). It is a fairly medium correlation: 42% of the variation is explained.

Table 4.9 Correlation

		GPA	High School Arabic Score
GPA	Pearson Correlation	1	.325**
	Sig. (2-tailed)		.000
	N	471	471
High School Arabic Score	Pearson Correlation	.325**	1
	Sig. (2-tailed)	.000	
	N	471	471

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

Table 4.10 illustrates the correlation coefficient and the strength of the relationship between the different tests and student GPA. The tests are arranged from the strongest to the weakest. Correlation coefficient is also used to measure predictive validity. As seen below, the correlation coefficient indicates that the five tests are valid whereas high school math test has been removed as it failed to be a variable predictor (See Table 4.4).

Table 4.10 Correlation Coefficient

Predictor	Correlation coefficient
CEPA reading Test Score	0.390
High School Arabic Score	0.325
High School English Score	0.312
CEPA Math Test Score	0.308
CEPA writing Test Score	0.273

4.3 The Independent T-test

The results of tables 4.11 indicate that no significant academic difference was found between male and the female students in GPA ($t= 0.565$, $df= 469$, $p=0.572 > 0.05$).

Tables 4.11 Gender Difference

Group Statistics					
	gender	N	Mean	Std. Deviation	Std. Error Mean
GPA	Male	71	2.0715	.93507	.11097
	Female	400	2.0003	.98598	.04930

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
GPA	Equal variances assumed	.464	.496	.565	469	.572	.07122	.12602	-.17641	.31885
	Equal variances not assumed			.587	99.675	.559	.07122	.12143	-.16970	.31215

Tables 4.12 indicate that no significant difference was found between the high foundation and the low foundation students in GPA ($t = -0.806$, $df = 469$, $p = 0.420 > 0.05$).

Tables 4.12 Academic level Difference

Group Statistics					
	academic Level	N	Mean	Std. Deviation	Std. Error Mean
GPA	Low	242	1.9757	.98678	.06343
	High	229	2.0484	.96906	.06404

Independent Samples Test											
		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
GPA	Equal variances assumed	.554	.457	-.806	469	.420	-.07273	.09018	-.24993	.10448	
	Equal variances not assumed			-.807	468.351	.420	-.07273	.09014	-.24985	.10440	

Chapter 5: Discussion

5.1 Opening

This chapter highlights the research findings supported by literature (e.g. research theories, empirical studies and findings of previous similar research), illustrates the research implications, and it also offers a conclusion as well as a list of recommendations for improvement. Though the literature is limited to general proficiency tests such as IELTS and TOEFL, the researcher of this paper assumes that the impact of CEPA on student academic performance, as measured by GPA is similar to the influence of IELTS and TOEFL on student academic performance.

5.2 Research Findings

5.2.1 Finding 1

Before listing the findings, it is worth noting that with the use of the regression analysis method, table 4.1 shows that the adjusted r square value in our model accounts for 42% of variance in GPA – respectable model. This suggests that language proficiency accounts for 42% of the variance in students' GPA, whereas the remaining 58% are explained by other factors (for instance family socio-economic status, family support, student motivation, student aptitude and determination). This indicates that the role of language must not be understated. In addition, table 4.2 reports an ANOVA, which assesses the overall significance of our model, shows that our model is significant ($P < 0.05$). Additionally, since 58% of the variance in student academic success is determined by other non-academic factors, this finding then implies that HCT should also focus on curricular development by enhancing student self-concept and self-regulation skills, employing practical strategies to raise student awareness of their goals, hence impact their motivation alongside the main focus on the academic curriculum.

Data analysis reveals significant positive correlations between CEPA English reading, CEPA English writing, CEPA math, high-school English and high-school Arabic tests and student academic performance, as measured by first-year GPA. With closer examination on the correlation coefficients, CEPA English-reading test (English

proficiency test) proves that it is the most significant predictor of student academic performance in FWC ($r = 0.390$, $N = 471$, $p < .0005$, two-tailed). This finding reveals the predictive validity of CEPA. It also implies the legitimate use of CEPA English test in HCT student admission policies; that is HCT has been successful in employing CEPA English test as a criterion to determine students' eligibility to HCT. The implication is that HCT will continue to rely on CEPA English in their admission policies.

This finding supports other research findings that revealed a common regression coefficient of about 0.3 between IELTS and GPA (Hill et al, 1999; Cotton and Conrow, 1998; Kerstjens and Nery, 2000). Cotton et al (1998, p. 98) at the University of Tasmania showed a positive relationship between reading and writing subtest in IELTS exam and student academic performance. Equally well, Kerstjens et al (2000) indicated a positive relationship between IELTS and college achievement. Additionally, Ho and Spinks (1985) revealed that English linguistic competency was the most influencing indicator in academic performance, scoring around 10% of the variance of performance measures at Hong Kong University. The adjusted r square value in this current research showed in our model accounts for 42% of variance in GPA. Similarly, Bellingham (1993), who carried out a research paper in New Zealand, found a moderate correlation between IELTS and GPA. Bellingham (1993) suggested that students scoring lower than 6.0 have a 20% opportunity to succeed while students scoring 6.0 or more have a 50% opportunity to succeed.

In addition, a comprehensive analysis of a research study addressed the employment of native and second languages in educational institutions, undertaken for the World Bank (Dutcher, 1994 cited in Tucker, 1999) and studied three various kinds of countries: 1) students with no (or little) broad literacy and communicative skills in the native language (for instance, Haiti, Nigeria, the Philippines), 2) students with some broad literacy and communicative skills in the native language (for instance, Guatemala) and 3) students with broad literacy and communicative skills in the native language (for instance, Canada, New Zealand, the United States). The conclusion of the research was that academic achievement in school heavily relied on the learner's mastery of cognitive or academic language, which was extremely different to the social or communicative language practiced at home (Dutcher, 1994 cited in Tucker, 1999).

Further, Graham (1987, p. 505), who studied the correlation between English language proficiency and academic attainment, confirmed that “while the research clearly shows that many factors other than English proficiency are important to academic success, there may be for each institution, or even for each program, a minimum level below which lack of sufficient proficiency in English contributes significantly to lack of academic success”. All in all, other intervening factors might contribute to student academic achievement, however it appears that the language and culture stand out in literature as Hill, Storch and Lynch (1999, p. 63) declare "nobody would argue that ELP [English Language proficiency] has no role to play in academic achievement”.

Recent research papers, carried out in 2001, 2002 and 2006, also affirm the significance between IELTS and GPA. Huong (2001) demonstrated a positive relationship of 0.34 ($p < 0.05$; r square = 0.12) in the first semester and 0.31 ($p < 0.05$; $R^2 = 0.10$) in the second semester. His research included 202 Vietnamese students studied in 29 different universities in Australia through a survey. Further, Huang revealed that high IELTS scores in listening and reading subtests were linked with high academic achievement in both semesters (correlation coefficients starting from 0.31 to 0.37 in the two variables). This particular statement is closely aligned with this research finding concerning the CEPA English-reading test correlation coefficient ($r = 0.390$, $N = 471$, $p < .0005$, two-tailed).

In a most quoted research paper, carried out by Feast (2002) who studied 101 foreign students at the University of Southern Australia using multiple regression analysis, revealed a positive correlation between IELTS performance and academic achievement (regression coefficient of 0.39, $p < 0.05$; $R^2 = 0.15$). She also added that a positive correlation was found between the study level and academic achievement (regression coefficient of 0.79; $R^2 = 0.62$). In the most recent research, Woodrow (2006) asserted the association between the two variables (IELTS and GPA) in a study that included 62 foreign postgraduate students at the University of Sydney. Woodrow (2006) revealed a positive relationship between IELTS performance and academic achievement ($r = 0.40$; $p < 0.01$; r square = 0.16). Woodrow (2006) specifically outlined a correlation of 0.52 ($R^2 = 0.27$) between IELTS band 5 and 6.5 and academic success. This result, Woodrow

(2006) asserted, indicates that English language competency is vital to academic success, especially in the lower end of a college entry requirement.

To validate the argument on the relationship between English language proficiency and academic success, research studies on TOEFL are also quoted. Al-Musavi and Al-Ansari (1999) evaluated the predictive validity of TOEFL and student grade point average (GPA) used as a criterion for academic achievement. They found high correlations between the two variables. Equally, Heil and Aleamoni (1974) revealed significant associations between TOEFL and GPA ($r = 0.270$ first-semester GPA and 0.336 second-semester GPA). The researchers concluded that the TOEFL was helpful in indicating academic achievement for non-native English speakers just like other proficiency tests are for native speakers of English. Additionally, a research study, consisted of 154 first-year international students, aimed at finding the predictive significance of the TOEFL at Oklahoma colleges and universities for first-year students, Bostic (1981) revealed significant associations ($r = .169$) between TOEFL scores and GPA.

5.2.2 Finding 2

Another interesting finding in this research is the significant correlation between high-school Arabic test, standardized test, and student academic performance ($r = 0.325$, $N = 471$, $p < .05$, two-tailed). The difference in correlation coefficient between CEPA English-reading test and high-school Arabic test is 0.065 which is basically negligible. This finding affirms that the Arabic test is as effective in predicting student academic success as CEPA English test. Some readers of this research might argue that the Arabic test was susceptible to subjective marking measures, as opposed to CEPA tests, but the correlation coefficient of the Arabic test ($r = 0.325$, $N = 471$, $p < .0005$, two-tailed) proves its predictive validity, hence its ability to forecast future academic success.

This surprising result found a correlation between Arabic skills, particularly reading language proficiency, and a GPA that partly consists of English skills alongside IT, Arabic and mathematics skills. The Arabic high-school test involved reading, writing, grammar and vocabulary achievement scores. This suggests that the reading skills

learned in Arabic appear to impact performance on the different English tests which are reflected in the students' GPAs. This might be due to the concept of the inter-reliance of languages (Cummins, 1979). Perhaps reading abilities in Arabic assisted the students' performance on the English tests.

As for the writing component in the high-school Arabic test, it appears that writing skills in Arabic, like proofreading, spelling, word choice, punctuation and grammar, positively influence the English scores as reflected by student GPA. Again, the inter-reliance of languages assists to elucidate these findings. Nevertheless, the requirements of the writing skills language are different from the reading abilities tested by the Woodcock (1980) language proficiency battery. In reading, students are tested according to their capacity to identify and attack vocabulary. Reading comprehension is assessed by having students fill in gaps with the vocabulary that best fits the item or selecting an option in multiple-choice questions. In the writing skills component, students are asked to spell and employ grammatical and punctuation rules. Other skills such as proofreading, recognizing spelling, grammatical, and punctuation rules are also involved. Hence, students are asked to employ different and even more complex linguistic skills. The possession of better developed writing skills in Arabic; therefore necessitates more cognitive academic language ability (Cummins, 1976).

Additional literature quoted to support this particular finding does not directly relate to other standardized tests, but the researcher of this paper uses theories and research studies that assert the significant association between learners' native language and the enhancement of their English competency. In other words, these theories and studies assert the significance of bilingualism; how first language development can promote second language acquisition.

For instance, Bialystock (1986) pointed out that bilingual learners surmount monolingual learners on assignments involving high levels of cognitive competency. Further, Hakuta, (1987) conducted group analytical reports that showed outstanding non-verbal competency among bilingual learners who were registered in Spanish-English primary education courses. Additionally, Cummins & Mulcahy (1978) revealed that competent

bilingual learners outperform monolingual learners in the fields of cognitive development, school success as well as language awareness.

A further significant issue about bilingualism is the extent of literacy in the primary and acquired languages among bilingual learners, as indicated by Cummins (1992). Cummins's research has indicated that literacy attainment in the first and second language is mandatory so as to reach the cognitive abilities desired in bilingual learners.

According to a research study carried out on minority, majority, and special-need population samples, researchers have confirmed that literacy is a key contributor to educational achievement. For instance, Westby (1984) affirmed that literacy among learners facilitates accumulation of more information faster than being proficient in oral language only. Equally, Skutnabb-Kangas and Toukoma (1979), founders of the developmental interdependence theory, suggested that a skill development in one language can be observed in a matching development of the same skills in a second language. This corresponding development of language is accredited to the success of bilingual programs, which concentrate their education in the second and the native language of learners. These programs showed that language minority learners do not display educational failure as the oral abilities in the second language are acquired. Studies, therefore, propose that the native language growth has no negative impact on the educational or cognitive development of learners.

Further, Cummins' studies (1992) proposed that the more proficient the learner's native language is, the more possible she or he is to enhance conceptual skills in the acquired language (L2). Moreover, researchers such as Ramirez, Yuen, Ramey, and Pasta (1991) pointed out that learners with stronger first-language proficiency outperform their counterparts in English literacy skills, especially reading. The findings also revealed that development of the native language enable learners to "catch up" to the success level of the same population. These two fascinating statements by the researchers assert that the more scores a student achieves in a literacy-based test in his/her native language (e.g. Arabic), the more likely it is for students to develop better English literacy skills, which can be tested in an English literacy-based or proficiency test. Hence, the

growth in the proficiency of the acquired language is partly a consequence of the degree of proficiency of the native language (Cummins,1979).

This research finding influence HCT admission policies. HCT can now rely on high-school Arabic test alongside CEPA English-reading test to determine student eligibility to HCT education. This finding also reveals that bilingualism is an asset and HCT should not eliminate the native language (Arabic) and completely replace it with English. HCT has decided starting 2010 academic year to eliminate Arabic courses and only offer intensive English instructions. A bilingual literacy program should be incorporated in the foundation year.

Further, since a proficiency in the native language contributes to a proficiency in the acquired language, then the implication of this finding is that students with limited second language proficiency, as measured by CEPA scores, but with relatively high native language proficiency, as measured by high-school Arabic test scores, should not be eliminated from entering HCT. HCT should provide intensive ESL English instruction that can help such students develop their English language proficiency.

5.2.3 Finding 3

Another finding of this research is the significant correlation between CEPA math test scores and student academic performance. High-school math test scores failed to act as a significant predictor, hence it is not considered when analyzing data. CEPA math test, on the other hand, has proved its predictive validity and its ability to predict student academic achievement ($r = 0.308$, $N = 471$, $p < .0005$, two-tailed). Literature quoted in a defense of the role of mathematical proficiency and later academic success is limited and research studies were carried out on children. In addition, the literature suggests that a combination of mathematical proficiency and other linguistic skills can all contribute to academic success. In other words, the researcher of this paper indicates that mathematical proficiency is not exclusively accredited to student academic success; rather mathematical proficiency plays a partial role alongside other factors, as current research has shown.

For instance, Greg Duncan and his fellows carried out a study that consisted of around 20,000 kindergarten students to evaluate their background knowledge of mathematics, literacy and other skills such as attention-span competence and social skills (cited in Duncan et al, 2007). The study tracked the students for a number of years through elementary school while assessing their reading and mathematics (cited in Duncan et al, 2007). After a consideration of the differences in IQ and parents' socio-economic status, Duncan revealed that students with the greater math competency mastered in kindergarten had a tendency to acquire higher mathematical and reading scores years later (cited in Duncan et al, 2007).

In research studies that deal with tertiary-level students, similar positive reactions were observed between the knowledge of math and academic achievement. For instance, Wilcox (1975), who carried out a study consisting of international undergraduates, found significant relationships between high school GPA scores and academic achievement (around .50), mathematical ability and academic achievement (around .50), but he also found that a combination of mathematical ability and high school GPA scores resulted in a slightly higher academic achievement (around .60) (cited in Graham, 1987). Similarly, in another study carried out by Graham (1984) at the University of Maryland revealed that for the non-native speakers of English, at the Baltimore County campus, math SAT scores and high-school GPA scores were the best indicators of academic success. SAT is an American standardized test taken for university admission.

The implication of this finding is that HCT should continue to offer mathematical courses as well as remedial mathematical sessions to students who lack basic mathematical skills in the foundation year. Their proficiency in mathematical alongside proficiency in the native and acquired languages altogether contribute to overall academic language.

5.3.4 Finding 4

The results of tables 4.11 indicate that no significant academic difference was found between male and female students in GPA ($t= 0.565$, $df= 469$, $p=0.572 > 0.05$). The number of participants in the research study is 471 students in total (71 male students versus 400 female students). The standard deviation of male students is 0.93507 whereas the standard deviation of female students is 0.98598.

Contrary to what is commonly accepted among HCT teachers, this finding shatters the common beliefs. The implication of this finding is that male students' academic aptitude should not be underestimated, especially in second language acquisition. Male students can be reasonably challenged academically in a reasonable time-frame to achieve the desired learning outcomes.

Literature quoted to support this finding is inconclusive regarding the difference of male and female academic aptitude in learning English language. In addition, literature gives more attention to self-regulatory skills and self-efficacy than to gender when attributing causes to academic success. For instance, Pajares and Valiante (2002, p. 20) remarked that "in areas related to language arts, male and female students exhibit similar confidence even though the achievement of girls typically is higher". At the Civil Aviation School in Turkey, another researcher named Ergul (2004) investigated the issue of gender academic difference by examining the correlation between student traits and their academic performance and found no significant relationship between the two variables.

A side from research studies, theoretical literature has documented several causes to overall student academic performance. Theories ascribe one's performance to self-regulatory skills which are partly dependent on beliefs learners hold about themselves. These beliefs refer to student perceptions of their ability to achieve a task or successfully complete an activity or what Bandura names self-efficacy (Pajares, 1997). The use of self-efficacy is intuitive. Learners get involved in a behavior, interpret the consequences of the actions, and employ the interpretations to further build up beliefs about their ability to get involved in later behaviors in similar tasks. Academically, this means that learner academic accomplishments are partly a consequence of what they believe they have achieved and can achieve. This helps justifies why learners' academic accomplishments are different noticeably when they possess similar capabilities (Pajares, 1997).

Further, researchers have revealed that learners' self-efficacy learning is associated with motivation and performance in academic fields such as language arts, mathematics, and science. Learners' self-assurance in their self-regulated learning strategies is associated with their school self-concept, self-efficacy, significance of

learning, especially school subjects, success goals, and academic achievements (cited in Pajares, 1997). These statements by Pajares indicate that since no academic difference was shown in the sample group of this research, the sample group's self-regulatory skills and self-efficacy are hypothesized causes to having students achieve well academically. Other factors can be also attributed to the good quality of English instruction, good quality of teachers, one-on-one student advisory assistance and one-on-one extra academic assistance.

5.3.5 Finding 5

Another interesting finding is that no significant difference was found between the high Foundation and the low Foundation students in GPA ($t = -0.806$, $df = 469$, $p = 0.420 > 0.05$) as tables 4.12 show. The number of participants in the study is 471 students in total. The standard deviation of high foundation students is 0.96906 whereas the standard deviation of low Foundation students is 0.98678. This finding reveals that despite the fact that high-foundation students scored higher on CEPA and completed more demanding English, mathematics, Arabic and IT (computer) courses, low-Foundation students were able to score relatively similar. Hypothesized causes can vary. Firstly, there is a possibility that the low Foundation courses were not too demanding courses, but they were reasonably challenging courses that pushed high academic scores. In other words, it is possible that the a one-year foundation program, in which students received ample learning opportunities and sufficient time to enhance their skills according to reasonable achievable learning objectives, was successful to yield the desired scores. In addition, other factors can be attributed to the good quality of English instruction, good quality of teachers, one-on-one student advisory assistance and one-on-one extra academic assistance. In contrast, high-foundation courses were probably less reasonably challenging, thus students were able to score high marks.

An additional factor than can be play a role is that there is a possibility that the marking criteria in the low-foundation courses was susceptible to subjectivity and that pushed higher academic scores. This phenomenon can be referred to as grade inflation. Grade inflation occurs when higher marks are given for assignments or assessments that would receive lower marks (Brawer, 1996).

With disregard to the possibility of grade inflation, the implication of the finding is that low and high foundation curriculum was successful and legitimate in accommodating the needs of each group and reasonably challenging them to achieve the desired learning outcomes.

5.3.6 Finding 6

Data analysis also shows that CEPA English writing test is a significant predictor of student academic success ($r = 0.273$, $N = 471$, $p < .0005$, two-tailed). The implication of this finding is that CEPA writing should be used an admission criterion to determine students' eligibility to HCT. Literature used to support this finding is similar to literature quoted in Finding 1.

5.3 Conclusion

In conclusion, this research study has investigated the linguistic impact of 6 main proficiency and standardized tests (CEPA reading test, CEPA writing test, CEPA math test, high-school English test, high-school Arabic test and high-school math test) on student academic student, as measured by student first year GPA. Though literature, that investigated the impact of other English proficiency tests, showed inconclusive findings regarding the relationship between proficiency tests and student GPA, this particular research study is an affirmative addition to research findings that confirmed a positive significant correlations between English proficiency tests and GPA, as CEPA reading test proved ($r = 0.390$, $N = 471$, $p < .0005$, two-tailed). In other words, this research affirms that CEPA, as a proficiency test, is the most significant predictor of student academic success. This finding also implies the predictive validity of CEPA English test and HCT's legitimate admission policy to heavily rely on it to determine students' eligibility to HCT education system.

Further, other tests have proven their predictive validity in determining student future academic success such as high-school Arabic test and student GPA ($r = 0.325$, $N = 471$, $p < .0005$, two-tailed), high-school English test and student GPA ($r = 0.312$, $N = 471$, $p < .05$, two-tailed), CEPA math test and student GPA ($r = 0.308$, $N = 471$, $p < .0005$, two-tailed) and CEPA English writing test and student GPA ($r = 0.273$, $N = 471$, $p < .0005$, two-tailed). The tests proved predictive validity suggests including them in

HCT's admission policies besides CEPA English reading test. These tests further validate students' eligibility to HCT education system, particularly the high-school Arabic test.

As seen, the difference in correlation coefficient between CEPA English-reading test and high-school Arabic test is 0.065 which is basically negligible. This finding suggests that the Arabic test is as effective in predicting student academic success as CEPA English test. High-school Arabic test also proves the essential role of the native language in student academic success, especially in second language acquisition. This implication of this finding is that students with limited second language proficiency, as measured by CEPA scores, but with relatively high native language proficiency, as measured by high-school Arabic test scores, should not be eliminated from entering HCT as they have an opportunity to develop their English academic skills owing to their strong proficiency in Arabic. Hence, HCT should provide intensive ESL English instruction that can help such students develop their English language proficiency. In addition, the reliance on multiple admission criteria (for example, passing CEPA English reading test, high-school Arabic test and high-school English test) guarantees fairness as students might be eliminated from entering HCT due to low CEPA English proficiency scores. These low CEPA English scores might be obtained due to uncontrollable factors such as fatigue or test anxiety test takers experience.

Another conclusion of this study is that the adjusted r square value in our model accounts for 42% of variance in GPA – respectable model. This suggests that language proficiency accounts for 42% of the variance in students' GPA, whereas the remaining 58% are explained by other factors (for instance family socio-economic status, family support, student motivation, student aptitude and determination). This indicates that the role of language must not be understated. It also indicates that since 58% of the variance in student academic success is determined by other non-academic factors, this finding then implies that HCT should focus on curricular development by enhancing student self-concept and self-regulation skills, employing practical strategies to raise student awareness of their goals, hence impact their motivation.

This research also reveals that there is no significant academic difference between male and female students in GPA ($t= 0.565$, $df= 469$, $p=0.572 > 0.05$). The number of participants in the research study is 471 students in total (71 male students versus 400 female students). The standard deviation of male students is 0.93507 whereas the standard deviation of female students is 0.98598. The implication of this finding is that male students' academic aptitude should not be underestimated, especially in second language acquisition. Male students can be reasonably challenged academically in a reasonable time-frame to achieve the desired learning outcomes.

Additionally, this research concludes interesting finding that shows no significant difference was found between high Foundation and the low Foundation students in GPA ($t= -0.806$, $df= 469$, $p = 0.420 > 0.05$). This finding reveals that despite the fact that high-foundation students scored higher on CEPA and completed more demanding English, mathematics, Arabic and IT (computer) courses, low-foundation students were able to score relatively similar.

5.4 Recommendations

Based on the analyses discussed earlier, the recommendations are offered in order to help decision makers and educators in improving student admission policies, particularly in higher-education institutions. These recommendations are more tolerated to HCT students.

- HCT should use a multiple-criteria decision system to determine student eligibility to its education system. Since high-school Arabic test has proven to predict student academic success, it should be used alongside CEPA English in student college admissions. Math CEPA and high-school English tests can also be added. This multiple criteria decision system guarantees fairness as students might be eliminated from entering HCT due to low CEPA English proficiency scores. However, it is evident in research findings that a combination of skill excellence in English, Arabic and mathematics can contribute to later college academic success.
- This research study was limited to only investigating the impact of language proficiency tests (e.g. CEPA) on student academic performance, as measured by student first year GPA (FGPA). It is recommended that future studies also focus on second, third and graduation GPA to investigate the impact of CEPA on a

student academic performance in a longer college-life period so that to facilitate continuous monitoring and comparative usefulness of admission criteria.

- This research study is solely quantitative, hence it is recommended that future studies use a mixed research method (both quantitative and qualitative) to further investigate and validate the causes to the findings.
- This research study should be expanded to include the impact of CEPA test scores on different major students, for example business students, education students, IT students, engineering students and media students.
- Research should be expanded to investigate the impact of intervening variables (for example socio-economic status, family support and student aptitude) on student academic success using multiple regression analysis.
- For institutions which attempt to decide on the minimal level of English proficiency required, ESL educators should observe the academic performance of students with limited English capability in their institution and examine their grades using English proficiency measures. Palmer and Woodford (1978) have asserted that each institution is required to carry out its own research to come up with suitable academic levels owing to the various institutional expectations and benchmarks.

Word Count 16, 212

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Appendix 1

N	Campus	Level	CEPA R	CEPA W	CEPA M	High School English	High School Math	High School Arabic	GPA
1	FMC	Low	149	2	147	71	91	74	1.99
2	FMC	Low	138	0	143	60	63	61	0.93
3	FMC	Low	151	3	134	67	87	74	2.7
4	FMC	Low	156	2	152	67	77	72	3.51
5	FMC	Low	147	2	139	66	82	68	2.99
6	FMC	Low	146	2.5	135	71	72	66	2.52
7	FMC	Low	149	1	142	67	81	75	0.93
8	FMC	Low	90	1	144	60	77	65	2.4
9	FMC	Low	150	3	145	71	87	74	3.5
10	FMC	Low	146	2.5	159	68	74	81	3.29
11	FMC	Low	153	2	136	69	68	69	2.11
12	FMC	Low	138	1	151	66	89	73	1.06
13	FMC	Low	148	0	135	64	76	71	0.87
14	FMC	Low	151	2.5	140	67	82	77	2.29
15	FMC	Low	152	3	154	72	85	77	1.89
16	FMC	Low	143	1.5	131	63	67	66	0.45
17	FMC	Low	147	2	150	69	86	74	1.32
18	FMC	Low	158	2	143	69	86	73	2.74
19	FMC	Low	145	0	154	67	69	65	2.59
20	FMC	Low	158	3.5	146	71	72	70	2.9
21	FMC	Low	151	3	150	69	85	76	3.75
22	FMC	Low	149	1.5	139	68	89	74	2.56
23	FMC	Low	147	1	90	62	81	73	1.62
24	FMC	Low	146	2	138	65	75	67	2.48
25	FMC	Low	136	5	146	64	66	68	0.99
26	FMC	Low	134	1.5	148	70	66	79	1.15
27	FMC	Low	143	0	90	64	65	65	2.17
28	FMC	Low	90	5	157	60	78	74	2.79
29	FMC	Low	147	1	171	72	70	82	1.16
30	FMC	Low	163	0	140	71	81	71	2.48
31	FMC	Low	146	2.5	156	73	87	73	1.58
32	FMC	Low	157	2	128	72	74	67	3.15
33	FMC	Low	131	1	152	65	82	74	1.05
34	FMC	Low	133	1	138	69	70	62	0.54
35	FMC	Low	162	3	128	73	67	74	3.28
36	FMC	Low	130	2	128	60	81	70	2.43
37	FMC	Low	160	1.5	90	63	76	71	2.79
38	FMC	Low	154	3	135	78	76	74	1.47

39	FMC	Low	125	2.5	154	66	61	73	3.18
40	FMC	Low	160	0	115	68	79	78	1.62
41	FMC	Low	158	2.5	130	77	75	65	2.53
42	FMC	Low	153	1	145	72	71	71	2.47
43	FMC	Low	146	1.5	143	64	71	64	2.48
44	FMC	Low	145	2.5	135	68	69	64	0.3
45	FMC	Low	148	1	90	66	76	63	0.94
46	FMC	Low	90	5	148	61	63	65	0.58
47	FMC	high	183	5.5	180	95	84	96	3.91
48	FMC	high	166	4	165	83	88	90	3.31
49	FMC	high	161	3.5	139	81	86	81	0.49
50	FMC	high	154	1.5	168	73	90	82	2.61
51	FMC	high	157	2.5	167	79	86	85	1.89
52	FMC	high	164	3.5	174	82	76	89	2.71
53	FMC	high	155	3	146	74	87	90	1.86
54	FMC	high	164	3.5	150	80	89	70	1.82
55	FMC	high	176	3.5	170	84	89	85	3.37
56	FMC	high	168	3	150	80	78	86	2.26
57	FMC	high	157	2.5	156	82	81	77	0.5
58	FMC	high	157	3.5	176	74	77	86	2.07
59	FMC	high	148	2.5	155	71	95	92	0.97
60	FMC	high	173	4	162	76	73	67	1.88
61	FMC	high	160	2.5	157	69	84	72	0.41
62	FMC	high	147	2.5	171	68	68	82	1.38
63	FMC	high	166	3	150	80	78	69	2.08
64	FMC	high	165	3	155	82	67	74	2.66
65	FMC	high	156	2	150	78	83	78	1.65
66	FMC	high	159	4	144	75	77	78	2.71
67	FMC	high	157	2.5	180	78	82	77	2.54
68	FMC	high	159	3	166	79	60	86	1.08
69	FMC	high	170	4	147	84	0	75	2.72
70	FMC	high	186	3.5	148	94	61	74	2.21
71	FMC	high	166	3	169	83	87	95	3.47
72	FWC	low	160	3.5	133	81	74	74	3.25
73	FWC	low	151	3	155	67	85	60.7	2.4
74	FWC	low	153	2.5	172	68	92	72.3	2.31
75	FWC	low	152	0	168	68	67.3	76.5	2.83
76	FWC	low	160	2	143	67	90	79.7	3.78
77	FWC	low	157	2	160	69	78	84.7	3.26
78	FWC	low	151	2.5	150	65	89	83	3.25
79	FWC	low	143	3	143	73	91	81	2.98
80	FWC	low	151	3	140	64	62	71.7	1.62
81	FWC	low	154	3	165	68	81.3	85	3.47

82	FWC	low	149	3	122	72	77	79	1.28
83	FWC	low	153	2.5	149	68	81	89	2.36
84	FWC	low	166	4	151	87	94	84.7	2.3
85	FWC	low	162	3	158	72	84	83	3.41
86	FWC	low	157	3	152	67	83	71	1.98
87	FWC	low	156	3	163	69	72	82	3.2
88	FWC	low	157	3	119	67	82	76	1.46
89	FWC	low	145	2.5	148	67	62	73	2.24
90	FWC	low	150	3.5	158	64	90	78	2.81
91	FWC	low	138	3	160	60	93	73	2.06
92	FWC	low	149	2.5	142	60	90	75	2.46
93	FWC	low	158	3	175	75	80	67	2.75
94	FWC	low	153	2	148	65	92	78	2.49
95	FWC	low	144	2	156	60	69	78	2.58
96	FWC	low	148	1	151	63	86	75	1.98
97	FWC	low	142	1	150	60	91	65	0.48
98	FWC	low	145	1.5	130	69	87	76	2.22
99	FWC	low	140	2	148	62	86	68	2.1
100	FWC	low	142	2	118	66	85	66	0.3
101	FWC	low	154	2	134	62	77	71	2.01
102	FWC	low	137	2.5	163	64	62	78	1.59
103	FWC	low	159	3	168	72	67	81	2.7
104	FWC	low	157	5	156	62	96	83	2.4
105	FWC	low	140	5	157	60	88	72	1.58
106	FWC	low	145	5	149	60	89	65	0.23
107	FWC	low	158	3	146	73	81	80	1.96
108	FWC	low	150	2	160	60	93	83	1.38
109	FWC	low	151	2	161	60	96	79	3.17
110	FWC	low	151	2	152	65	95	81	2.62
111	FWC	low	137	0	150	61	90	69	0.48
112	FWC	low	148	2	153	63	88	80	1.64
113	FWC	low	149	2.5	167	65	99	74	0.76
114	FWC	low	143	2	150	64	96	80	2.81
115	FWC	low	138	1.5	128	61	84	62	0.81
116	FWC	low	145	5	152	61	90	69	0.66
117	FWC	low	147	1.5	162	63	99	74	1.16
118	FWC	low	148	3	163	68	96	78	2.28
119	FWC	low	140	2.5	133	61	89	72	0
120	FWC	low	155	2.5	148	70	92	75	2.53
121	FWC	low	146	1.5	161	61	96	86	2.71
122	FWC	low	152	1.5	161	64	87	77	2.71
123	FWC	low	156	2.5	157	70	95	83	2.58
124	FWC	low	149	2	165	67	95	87	2.58

125	FWC	low	152	2	158	67	93	88	2.95
126	FWC	low	147	2.5	154	64	90	81	2.36
127	FWC	low	141	1	134	60	83	78	0.78
128	FWC	low	154	1	161	64	96	81	1.84
129	FWC	low	161	5	152	67	89	77	2.81
130	FWC	low	149	1	144	61	83	78	0.3
131	FWC	low	141	1.5	153	60	64	61	0.23
132	FWC	low	139	1	146	62	80	66	1.03
133	FWC	low	155	2	140	64	81	79	2.47
134	FWC	low	148	0	140	61	81	70	0.6
135	FWC	low	147	2.5	150	60	81	82	1.34
136	FWC	low	148	2	150	60	86	73	0.1
137	FWC	low	148	2	158	61	90	84	0.98
138	FWC	low	144	5	150	63	91	70	1.84
139	FWC	low	149	1.5	150	61	96	91	1.5
140	FWC	low	148	5	158	63	95	88	2.65
141	FWC	low	153	2	153	71	80	70	0.78
142	FWC	low	154	3	142	67	70	75	2.66
143	FWC	low	153	2.5	171	60	62	77	2.75
144	FWC	low	139	2	141	68	80	73	0.63
145	FWC	low	147	2.5	149	72	99	78	2.75
146	FWC	low	140	2	141	70	85	66	1.41
147	FWC	low	147	2	153	71	99	88	3.28
148	FWC	low	144	2	161	67	96	80	3.17
149	FWC	low	148	2	145	71	94	79	3.2
150	FWC	low	158	3.5	151	73	92	81	3.28
151	FWC	low	148	0	135	69	90	67	0.78
152	FWC	low	149	2.5	142	72	89	80	2.01
153	FWC	low	142	1	154	65	89	84	2.22
154	FWC	low	144	1	146	69	88	77	0.51
155	FWC	low	133	2.5	140	69	94	86	0.87
156	FWC	low	134	5	143	69	89	80	1.84
157	FWC	low	152	2	145	74	99	86	3.25
158	FWC	low	150	1.5	141	70	82	72	0.33
159	FWC	low	165	2.5	125	84	75	80	2.89
160	FWC	low	149	1	159	67	96	79	3.2
161	FWC	low	141	2	139	70	76	76	2.22
162	FWC	low	147	2	132	71	79	75	1.23
163	FWC	low	152	3	146	74	66	76	3.29
164	FWC	low	153	2.5	144	69	92	65	2.44
165	FWC	low	153	2	169	71	77	80	3.28
166	FWC	low	158	1	147	69	96	77	2.58
167	FWC	low	149	3	183	73	88	81	2.86

168	FWC	low	148	2	151	69	91	78	1.58
169	FWC	low	139	5	141	65	88	70	1.75
170	FWC	low	144	5	144	65	73	69	2.01
171	FWC	low	153	1	151	74	84	77	2.06
172	FWC	low	146	5	143	68	93	71	0.2
173	FWC	low	147	1	150	67	99	88	3.17
174	FWC	low	154	1	155	68	86	77	0
175	FWC	low	132	1	137	66	70	69	0.3
176	FWC	low	155	1	140	67	71	69	2.31
177	FWC	low	139	0	135	65	70	74	1.58
178	FWC	low	146	2	153	69	87	78	1.89
179	FWC	low	149	1.5	147	73	89	81	1.62
180	FWC	low	141	2	115	81	86	73	1.83
181	FWC	low	152	2	148	68	72	80	2.28
182	FWC	low	147	1.5	137	71	65	75	0.49
183	FWC	low	144	0	148	75	84	74	1.68
184	FWC	low	146	2.5	136	71	81	80	0.55
185	FWC	low	151	2.5	151	78	91	79	1.27
186	FWC	low	149	5	152	73	88	77	2.63
187	FWC	low	135	2.5	152	78	93	82	3.2
188	FWC	low	144	3	148	76	82	79	2.22
189	FWC	low	148	1.5	147	73	92	77	1.46
190	FWC	low	147	1.5	152	74	94	84	1.82
191	FWC	low	146	2	139	74	82	86	0.6
192	FWC	low	161	2.5	154	76	93	78	2.95
193	FWC	low	155	2	148	68	82	79	1.79
194	FWC	low	160	2.5	155	77	82	70	3
195	FWC	low	146	5	150	63	72	76	0.23
196	FWC	low	153	5	144	71	90	84	2.22
197	FWC	low	141	1.5	146	67	84	72	1.23
198	FWC	low	155	5	146	69	85	74	2.4
199	FWC	low	150	1.5	153	74	75	77	1.23
200	FWC	low	144	5	157	72	90	74	1.61
201	FWC	low	153	2.5	147	69	64	66	1.68
202	FWC	low	155	2.5	155	74	86	73	2.35
203	FWC	low	146	2.5	151	72	84	74	1.71
204	FWC	low	139	1	141	61	69	60	0
205	FWC	low	139	2.5	154	60	81	82	0.85
206	FWC	low	142	1.5	146	66	94	69	0.42
207	FWC	low	151	2	141	65	85	67	0.23
208	FWC	low	145	2.5	158	60	75	73	1.77
209	FWC	low	152	3	152	68	88	79	2.22
210	FWC	low	147	2.5	163	67	78	96	3.5

211	FWC	low	156	1.5	154	66	64	79	2.27
212	FWC	low	151	1.5	141	61	79	71	1.35
213	FWC	low	145	2.5	143	64	81	76	0.41
214	FWC	low	145	1	142	64	72	82	1.71
215	FWC	low	158	2.5	137	68	81	72	2.19
216	FWC	low	90	0	154	71	92	80	0.23
217	FWC	low	149	1.5	150	69	91	81	2.49
218	FWC	low	147	0	141	65	82	78	1.41
219	FWC	low	159	3.5	121	72	73	74	2.31
220	FWC	low	151	2	148	72	95	80	3.32
221	FWC	low	155	3.5	153	74	68	75	2.58
222	FWC	low	149	2	163	70	96	88	2.78
223	FWC	low	125	1.5	128	72	70	72	0.33
224	FWC	low	143	1.5	157	66	93	80	1.43
225	FWC	low	155	3	154	70	73	64	3.02
226	FWC	low	147	2	145	62	82	76	2.57
227	FWC	low	157	2.5	163	68	73	87	3.07
228	FWC	low	145	1.5	162	68	61	80	0.33
229	FWC	low	151	2.5	145	68	97	82	3.23
230	FWC	low	152	3	154	72	97	79	2.76
231	FWC	low	154	3.5	150	73	99	80	2.79
232	FWC	low	154	2	142	66	91	79	2.49
233	FWC	low	163	3	163	69	96	84	3.07
234	FWC	low	152	3	150	68	60	81	2.22
235	FWC	low	139	1	148	60	90	73	0.3
236	FWC	low	152	3	160	66	95	84	2.53
237	FWC	low	150	2.5	153	66	88	79	0.59
238	FWC	low	152	2	154	69	85	81	1.65
239	FWC	low	147	2	153	71	91	85	2.44
240	FWC	low	137	1	145	60	63	67	0.3
241	FWC	low	143	0	144	70	72	77	1.59
242	FWC	low	154	3	142	73	91	84	3.3
243	FWC	low	143	2	143	70	74	78	0.3
244	FWC	low	150	2.5	142	71	97	85	2.78
245	FWC	low	144	2.5	155	79	67	86	2.96
246	FWC	low	150	3	144	69	90	81	2.4
247	FWC	low	140	2	149	67	78	84	3.03
248	FWC	low	152	3	163	73	96	87	3.54
249	FWC	low	149	3	146	70	90	86	2.58
250	FWC	low	148	3	134	71	65	84	2.43
251	FWC	low	155	2	165	75	66	82	2.65
252	FWC	low	146	2	154	67	61	85	3.16
253	FWC	low	151	2.5	142	73	77	88	3.04

254	FWC	low	148	1.5	153	62	86	69	0.99
255	FWC	low	142	2	132	69	77	71	0.42
256	FWC	low	144	2.5	146	75	75	78	0.33
257	FWC	low	143	1	148	64	83	75	1.2
258	FWC	low	154	2	148	70	70	71	3.46
259	FWC	low	153	2.5	157	65	81	82	0
260	FWC	low	153	0	168	60	94	86	3.29
261	FWC	low	150	2.5	142	67	84	79	0.93
262	FWC	low	153	1	142	75	81	74	2.39
263	FWC	low	154	2	148	62	87	75	1.65
264	FWC	low	152	2.5	124	65	78	79	2.49
265	FWC	low	158	3	170	77	89	94	2.71
266	FWC	low	151	3	160	68	97	79	2.31
267	FWC	low	147	1.5	141	0	0	0	3.16
268	FWC	high	162	3	160	69	93	85	1.89
269	FWC	high	147	2.5	167	72	74	89	1.8
270	FWC	high	182	4	173	89	68	89	3.49
271	FWC	high	181	3.5	158	90	94	84	2.31
272	FWC	high	178	4	169	87	82	96	2.86
273	FWC	high	160	3	159	74	66	92	1.07
274	FWC	high	177	4.5	157	91	89	95	3.11
275	FWC	high	173	4.5	182	89	91	96	3.32
276	FWC	high	176	4	180	89	88	95	3.32
277	FWC	high	169	3.5	148	78	79	78	1.09
278	FWC	high	166	4	160	79	83	83	1.53
279	FWC	high	168	3	172	79	99	94	2.69
280	FWC	high	167	3.5	158	80	93	90	2.63
281	FWC	high	158	2.5	164	67	63	86	1.51
282	FWC	high	165	4	173	80	75	89	2.83
283	FWC	high	178	4.5	160	82	74	83	2.73
284	FWC	high	156	3.5	157	78	62	87	0.83
285	FWC	high	160	3.5	153	78	81	76	0.24
286	FWC	high	163	2	175	75	88	82	2.55
287	FWC	high	166	3.5	156	75	77	69	0.47
288	FWC	high	153	3	163	73	68	86	0
289	FWC	high	175	4	186	90	97	95	4
290	FWC	high	152	3	162	70	63	78	1.26
291	FWC	high	160	3.5	174	71	75	94	1.77
292	FWC	high	148	2	170	65	82	82	0
293	FWC	high	154	2	164	64	98	90	0.77
294	FWC	high	168	2.5	165	81	85	85	2.29
295	FWC	high	156	3	155	66	91	79	0.28
296	FWC	high	163	2	160	81	99	91	2.18

297	FWC	high	164	2.5	176	79	96	90	1.38
298	FWC	high	171	2.5	157	82	71	68	1.68
299	FWC	high	165	2.5	158	79	92	85	1.53
300	FWC	high	160	3	143	74	69	67	0.41
301	FWC	high	159	3	158	70	96	90	1.6
302	FWC	high	159	3.5	159	77	96	90	2.01
303	FWC	high	156	3.5	175	75	99	87	2.11
304	FWC	high	165	3	172	79	92	91	2.74
305	FWC	high	169	3.5	164	82	86	88	2.4
306	FWC	high	168	3.5	173	84	96	94	3.7
307	FWC	high	167	4	155	81	68	77	0.24
308	FWC	high	158	3.5	146	72	83	78	1.07
309	FWC	high	163	3	152	69	74	75	0.38
310	FWC	high	164	4.5	164	79	80	77	1.26
311	FWC	high	170	4.5	178	83	99	96	2.86
312	FWC	high	172	5	153	85	83	92	2.67
313	FWC	high	173	4	172	84	91	91	2.52
314	FWC	high	166	4	153	77	77	88	1.55
315	FWC	high	158	3	154	77	95	90	1.99
316	FWC	high	162	3.5	147	83	94	84	1.65
317	FWC	high	160	3.5	163	84	100	92	2.86
318	FWC	high	161	3	159	81	100	90	1.8
319	FWC	high	162	3	166	78	99	91	2.55
320	FWC	high	164	2.5	154	81	96	88	1.87
321	FWC	high	163	3	143	82	97	87	1.31
322	FWC	high	170	3	169	88	99	94	2.73
323	FWC	high	165	2.5	146	82	74	76	1.74
324	FWC	high	143	3	153	73	91	79	0
325	FWC	high	164	2.5	166	75	64	81	1.79
326	FWC	high	148	2	156	70	96	85	0
327	FWC	high	168	4	188	87	77	91	2.86
328	FWC	high	155	2.5	166	75	68	85	1.81
329	FWC	high	164	4.5	173	85	83	93	2.67
330	FWC	high	155	3	178	75	73	90	1.91
331	FWC	high	165	3	161	82	94	85	2.63
332	FWC	high	156	2	162	82	87	86	0.38
333	FWC	high	171	4	181	84	98	90	2.89
334	FWC	high	159	3	153	77	86	82	0.94
335	FWC	high	159	3.5	164	85	97	89	2.7
336	FWC	high	166	2.5	152	83	91	85	2.31
337	FWC	high	174	3	170	88	82	95	3.2
338	FWC	high	162	2.5	164	79	62	72	1.55
339	FWC	high	170	3	177	81	89	95	2.62

340	FWC	high	156	2	154	74	83	74	0.28
341	FWC	high	166	3.5	162	82	98	88	2.42
342	FWC	high	166	4	154	87	91	84	2.19
343	FWC	high	164	3.5	165	79	96	87	1.53
344	FWC	high	160	2.5	157	76	96	83	1.15
345	FWC	high	179	4.5	170	92	100	91	3.77
346	FWC	high	160	2	178	79	72	87	2.67
347	FWC	high	167	3.5	165	81	76	87	2.58
348	FWC	high	162	3	143	81	87	74	1.56
349	FWC	high	146	2.5	164	76	96	83	1.05
350	FWC	high	157	3.5	150	80	86	84	0.88
351	FWC	high	169	3.5	175	83	75	93	2.78
352	FWC	high	156	2.5	154	79	96	86	0.28
353	FWC	high	153	3.5	155	83	92	84	1.8
354	FWC	high	167	3	165	82	93	91	3.06
355	FWC	high	166	4	160	82	93	90	2.42
356	FWC	high	160	3	175	78	62	84	1.88
357	FWC	high	169	3	180	83	86	90	2.86
358	FWC	high	166	4	157	83	97	85	2.45
359	FWC	high	154	1.5	153	76	90	76	0
360	FWC	high	161	2	159	76	93	84	1.58
361	FWC	high	168	3	157	86	87	91	2.13
362	FWC	high	175	3	156	89	83	88	3.24
363	FWC	high	167	3	140	78	75	81	1.9
364	FWC	high	163	4	137	82	67	73	0.38
365	FWC	high	173	3.5	163	87	96	85	3.19
366	FWC	high	163	3.5	137	77	69	76	0.94
367	FWC	high	161	2.5	150	81	80	81	1.04
368	FWC	high	172	4.5	163	86	90	88	2.79
369	FWC	high	168	4	158	83	86	76	2.34
370	FWC	high	161	2.5	159	80	95	88	0.68
371	FWC	high	179	3.5	174	88	90	87	3.47
372	FWC	high	163	3	167	81	92	76	1.72
373	FWC	high	164	2	143	76	81	75	1.04
374	FWC	high	163	3.5	160	83	64	79	2.27
375	FWC	high	177	3.5	153	85	95	90	2.6
376	FWC	high	162	4	153	82	90	85	2.18
377	FWC	high	162	3.5	156	82	86	78	1.86
378	FWC	high	156	3.5	149	77	84	82	0.41
379	FWC	high	164	4	152	84	80	84	1.18
380	FWC	high	169	3.5	148	71	63	75	1.67
381	FWC	high	168	4	170	84	75	97	3.32
382	FWC	high	171	4.5	149	83	71	82	2.87

383	FWC	high	153	3.5	176	71	70	92	1.04
384	FWC	high	175	3.5	170	90	86	90	3.51
385	FWC	high	158	4	164	78	74	91	2.58
386	FWC	high	159	3.5	156	72	98	89	2.55
387	FWC	high	152	3.5	156	71	76	83	0.47
388	FWC	high	164	3	146	73	89	89	0.66
389	FWC	high	154	3.5	165	73	97	89	1.63
390	FWC	high	154	3	150	75	94	79	0.44
391	FWC	high	165	3.5	178	76	77	92	2.95
392	FWC	high	162	3.5	165	80	76	90	2.52
393	FWC	high	173	2.5	157	81	89	88	1.98
394	FWC	high	169	3	158	84	94	86	2.3
395	FWC	high	153	2.5	164	73	82	86	1.1
396	FWC	high	168	4	174	83	64	94	2.76
397	FWC	high	157	3.5	177	75	78	92	2.01
398	FWC	high	176	4	175	89	73	89	3.24
399	FWC	high	173	4.5	157	83	93	91	2.23
400	FWC	high	165	3	162	81	95	91	2.63
401	FWC	high	162	5	157	78	95	87	2.4
402	FWC	high	171	3	157	79	93	84	1.48
403	FWC	high	150	3	159	70	81	82	0.24
404	FWC	high	163	4.5	175	85	84	95	3.51
405	FWC	high	173	3.5	175	85	85	90	3.52
406	FWC	high	173	4.5	179	88	92	96	3.8
407	FWC	high	171	3.5	168	85	76	96	3.24
408	FWC	high	168	3.5	173	81	83	95	2.58
409	FWC	high	166	3.5	165	81	74	89	2.68
410	FWC	high	177	3.5	171	87	69	86	3.25
411	FWC	high	168	4	154	83	98	90	3.24
412	FWC	high	158	3.5	165	73	66	89	2.52
413	FWC	high	165	3.5	175	75	79	86	2.58
414	FWC	high	162	3.5	172	79	77	91	2.82
415	FWC	high	151	4	154	75	77	77	1.06
416	FWC	high	169	3.5	152	79	94	84	2.18
417	FWC	high	160	3	163	77	88	84	1.55
418	FWC	high	163	3	152	80	83	82	0.94
419	FWC	high	166	3.5	159	83	71	82	2.51
420	FWC	high	162	4	174	83	76	73	2.37
421	FWC	high	160	3	145	76	89	81	1.14
422	FWC	high	175	4.5	160	89	82	83	2.43
423	FWC	high	161	3	159	79	98	93	2.55
424	FWC	high	170	3.5	156	85	95	84	2.09
425	FWC	high	164	4	145	82	95	80	1.64

426	FWC	high	165	3	174	82	89	95	2.78
427	FWC	high	155	3	160	84	62	87	0.28
428	FWC	high	152	2.5	160	73	98	89	2.01
429	FWC	high	156	3.5	150	73	90	89	1.51
430	FWC	high	168	4.5	173	92	89	95	3.51
431	FWC	high	162	3.5	170	90	84	94	2.61
432	FWC	high	162	3.5	148	80	92	89	1.52
433	FWC	high	154	3	150	74	66	84	1.8
434	FWC	high	154	3	168	75	78	92	1.77
435	FWC	high	148	2.5	180	72	88	91	1.47
436	FWC	high	162	3.5	164	86	78	93	2.89
437	FWC	high	174	3.5	170	90	76	93	3.59
438	FWC	high	175	4.5	169	88	69	89	3.48
439	FWC	high	153	3.5	169	71	76	95	0.97
440	FWC	high	174	4	179	86	74	89	3.34
441	FWC	high	167	4	160	85	93	93	2.11
442	FWC	high	155	2.5	170	75	75	79	1.13
443	FWC	high	157	2.5	165	76	66	83	0.47
444	FWC	high	166	1	155	81	63	75	2.43
445	FWC	high	183	4.5	156	94	60	81	3.09
446	FWC	high	171	4.5	176	87	90	96	2.82
447	FWC	high	176	3	170	78	75	86	2.82
448	FWC	high	169	4.5	162	85	76	83	2.63
449	FWC	high	178	4	179	89	84	93	3.49
450	FWC	high	164	3	177	74	73	90	2.65
451	FWC	high	155	3	145	80	83	85	1.04
452	FWC	high	154	3	152	72	82	87	1.29
453	FWC	high	169	3.5	156	83	89	82	2.14
454	FWC	high	177	4.5	146	92	82	80	2.9
455	FWC	high	167	3	144	80	62	80	1.29
456	FWC	high	160	2.5	176	72	86	91	1.29
457	FWC	high	157	4	171	67	84	88	2.04
458	FWC	high	160	3	169	76	75	92	0
459	FWC	high	155	2.5	152	69	91	78	0.6
460	FWC	high	168	3.5	152	81	95	93	2.52
461	FWC	high	170	4.5	163	86	89	88	3.15
462	FWC	high	163	3.5	167	83	100	95	2.58
463	FWC	high	163	3	156	84	89	90	2.18
464	FWC	high	171	4	177	82	89	95	2.82
465	FWC	high	174	3	173	91	78	92	3.49
466	FWC	high	181	4.5	166	93	98	92	3.61
467	FWC	high	168	3	170	81	75	83	2.52
468	FWC	high	171	3.5	169	85	100	90	3.05

469	FWC	high	162	3.5	157	75	99	89	1.89
470	FWC	high	170	4	167	87	93	86	3.23
471	FWC	high	163	3.5	175	78	81	90	2.71

Code: FMC Fujairah Men's College, FWC Fujairah Women's College

Level: academic level low and high

CEPA R: reading. CEPA W: writing and CEPA M: math

Appendix 2

Research Policy, Procedures and Guidelines

HCT-Fujairah

Introduction

The Higher Colleges of Technology-Fujairah (College) welcomes and encourages appropriate research involving College Faculty/staff/students or using data related to College Faculty/staff/students.

These Guidelines set forth the procedure for approval of research activity within the College and the principles required when conducting research.

The College Research Committee (CRC) is tasked with the approval and monitoring of research at, or associated with, the College.

Preface

Research in this Application refers to a methodical study to determine the accuracy of a hypothesis or to answer a specific question. The research proposed should be systematic and follow an organized process and standard research protocol. The proposal should clearly indicate these points. In addition, any general polling or data gathering, or use of data associated with the College, must gain approval from the CRC. The gathering of data information and facts without an approved research application will not be permitted.

Reflective teaching or action research is encouraged and the polling or data gathering, or the use of any data associated with the College, which is to be used for personal improvement of teaching practice is encouraged and does not require approval of the CRC.

Policy

1. Research to be conducted at, or involving resources of the College in any way, must be approved by the CRC prior to its execution and adhere to the requirements of the Committee. The College reserves the right to temporarily halt any research until it has been evaluated and approved by the CRC.
2. Research for commercial purposes will not normally be considered.
3. All components of the proposed research must ensure cultural sensitivities are maintained.
4. All proposed research must be consistent with the goals, philosophies, and policies of the College
5. Studies that are derogatory and/or prejudicial, or undermine, or attempt to undermine the integrity of any person or institution, will not be permitted.
6. Student researchers must work under the supervision of a member of the faculty.
7. Study participants must be made aware that their participation is voluntary.
8. All information provided by students must be kept confidential. All researchers are expected to conform to confidentiality with regard to students' rights of privacy.

9. Data collected or obtained from research studies must always be reported in the aggregate and the anonymity of any person related to data must be maintained.
10. Original data must be securely stored or archived and provision should be made for the destruction of archived original data no longer than 3 years after completion of the research.
11. The cost and/or labor on the part of the College in helping to fulfill a research request should not be burdensome and must be identified in the Research Proposal.
12. The study may not infringe upon the academic activities of the students.
13. When appropriate, feedback, follow-up, and/or counseling should be given to the study's participants.
14. Final manuscripts stemming from this research are to be provided to the College as appropriate.
15. Upon approval of the research proposal, an understanding exists between the Principal Investigator (PI) and the College that no changes will be made in the study's design or methods. If any changes to the research study are made after approval, all modifications must be reported in writing to the College prior to the study's implementation. The College reserves the right to terminate or postpone the study if the modifications do not conform to the guidelines established.

Procedure

The following steps indicate the necessary action to be taken with associated responsibility that is relevant to the submission of a research proposal and the conduct of research within or associated with HCT-Fujairah:

1. STEPS	2. RESPONSIBILITY	3. NOTES
<p>1. Complete the formal HCT-Fujairah Research Application and Application for Approval for Research: Ethical Requirement Forms and submit to CRC Chairperson (College Dean of Instruction)</p> <p><i>Note: Attach the following documents for review as appropriate:</i></p> <ul style="list-style-type: none"> • <i>Research Ethics / Standards from the University / Organization for which you are conducting this research</i> • <i>Consent letter you plan to use with respondents</i> • <i>For interviews or surveys - questions or comments on the direction of questioning.</i> 	Investigators (Faculty, staff, students and others)	<p>Appendix A – Research Application.</p> <p>Appendix B – Application for Approval for Research: Ethical Requirement.</p>
2. Review research proposal & required documents and forward proposal with comments to CRC members.	CRC members	Proposals to be reviewed within 10 working days.
3. Discuss research proposal & required documents to determine and agree	CRC members	

approval status in accordance with HCT-Fujairah Policy.		
4. Convey research approval/disapproval decision of CRC to applicant - PI.	CRC Chairperson	Note comments as appropriate
5. If approved, PI to sign Research Sharing Agreement form.	PI / CRC Chairperson	See Appendix C - Research Sharing Agreement
6. Provide advice, resources and support to faculty staff, students and others with their research project, as and when appropriate	CRC members, PI.	PI will provide regular research progress reports to CRC
7. Research project progress reports with relevant data to be maintained on HCT-Fujairah Library Research Database.	PI/Library Chair	As per Research Sharing Agreement
8. Highlight planned progress updates to both HCT-Fujairah management and faculty.	PI / CRC Chairperson	As per Research Sharing Agreement
9. Publish findings through wider PD activities, and submission of research findings / recommendations to Departments.	PI	As per Research Sharing Agreement

Part A: Application To Conduct Research By

HCT-Fujairah Faculty, Staff, Students And Others

Name (Principal Investigator): Hend Ghamri

College ID No: 200312933

Department: English Foundation Faculty

Supervisor/Chair: Pamela McInroy

Date of Application: 2 Jan 2012

Name of the University / Institution / Organization

Identify the institution where the research is to be conducted and also where it will be supervised if it is related to higher degree research.

Conducted at Fujairah Women's College

Supervised by the British University of Dubai (BUiD), currently located at Dubai Academic City.

Details of the Credential / Qualification

For which research is required, as appropriate.

Master of Education program which comprises 6 taught modules of 20 credits each and a dissertation which contributes 60 credits. The program entails the following modules: Research Methods in Education, Educational Policy, Leadership for School Improvement, Organizational Behavior, Educational Innovation and Curriculum and Teaching and Learning.

Research Personnel

List and identify names, titles, institutions and commitment in hours per week for Principal Investigator, Associate Investigators and all other personnel associated with this research proposal.

The research proposal is a quantitative research that is based on statistical analysis of data collected from the college database (after approval is granted from the various parties). I do not intend to use any qualitative methods to gather data such as interviews or observations, hence I have no list of personnel whom I will deal with to carry out the analytical research. This research will be done by myself only. The following reference is my university professor will guide me throughout the research and will mark the final research paper.

Hend Ghamri (the main and the only investigator)
English Foundation Faculty
Fujairah Women's College
hghamri@hct.ac.ae

Dr. Clifton Chadwick (dissertation supervisor and the main marker)
Senior Lecturer
International Management and Policy

Project Title

The title should be concise, descriptive and clearly identify the intent of the research.

The title is not final; it can change as I write the final research paper.

The Impact of Tests on Student College Achievement in FWC.

Project Summary

Identify concisely the purpose, nature and expected outcomes of the research. The summary should be written in lay-man terms to be understood by a non-expert in the area. (max ½ page)

The research examines the impact of different test results (CEPA English, CEPA math, High school English test, High school math test and High school Arabic test) on student college achievement in the academic year 2009/2010.

The expected outcomes are to indicate the degree of the impact of the test results on student college performance as measured by GPA. The research helps identify which test can predict academic success best.

Project Details

The Principal Investigator may attach their Project Proposal submitted to the granting institution OR their submission to granting institutions ethics committee. This may take the form of proposal submitted to the granting institution in which all of the requirements in this section are met.

Aims of the Project

Clearly describe the research problem. (max 1 page)

The proposed research investigates the relationship between test scores and student academic performance, as measured by GPA, in FWC. It tests the impact of CEPA English, CEPA math, High school English test, High school math test and High school Arabic test on Foundations students in AY 2009/2010 (both Higher Diploma Foundation HDF and Diploma Foundations DF).

General Research Questions

List the main research questions.

- 1) What is the relationship between CEPA English test scores of HCT first-year students and their academic achievement, as measured by foundation program GPA?
- 2) What is the relationship between CEPA math test scores of HCT first-year students and their academic achievement, as measured by foundation program GPA?

- 3) What is the relationship between high-school English test scores of HCT first-year students and their academic achievement, as measured by foundation program GPA?
- 4) What is the relationship between high-school math test scores of HCT first-year students and their academic achievement, as measured by foundation program GPA?
- 5) What is the relationship between high-school Arabic test scores of HCT first-year students and their academic achievement, as measured by foundation program GPA?

Purpose Statement

(this may be a hypothesis with defined variables or a list of specific research questions - max 1 page)

1. There are positive relationships between the different test results and Foundation students' GPA.

Significance

Identify the significance of the project and anticipated benefit to HCT-Fujairah, as well as what makes this project special.

The topic of the research proposal examines the impact of different test scores on student academic achievement, as measured by GPA. The interest drives from daily contact that the researcher of this paper has with the foundation students at HCT. The researcher has experienced how high-stake decisions are made based on student CEPA scores such as student HCT entry. The researcher is interested in testing the impact of high or low CEPA scores on student GPA and investigating the academic achievement difference between the higher diploma and diploma foundation students.

Further there is a lack of research on CEPA test with regard to investigating its validity or its impact on student academic performance, despite the fact that CEPA is widely used nationwide by all federal institutions and is the decisive tool to include or exclude Emirati students in/from these institutions, The researcher hopes that this study is a threshold to an on-going research on CEPA test. The researcher is also interested in re-examining previous studies done on the topic of proficiency tests and academic achievement, but in the researcher's own environment.

The research is also interested in finding out which of the five tests predict academic success best.

Background

As appropriate, identify the nature of previous work that related to the project and how this has led to this project, and/or identify the current status of proposed research at your institution (e.g.

informally approved by advisor, formally approved by institution's ethics committee) – include references as appropriate.

The proposed research topic has been approved by the British University professor and advisor, Clifton Chadwick, who will mark and supervise the project throughout this academic year. Two formal forms are attached; one indicates that none of the research proposal work will be published online or in print in the future and the other indicates the institution's ethics statement.

Dr. Clifton Chadwick
Senior Lecturer
International Management and Policy
Faculty of Education
British University in Dubai
clifton.chadwick@buid.ac.ae

Research Plan

This section should provide a precise and comprehensive overview of the project and the way in which it will proceed, including a time-frame. Identify the type of research (e.g. qualitative, quantitative, details about a combination of these), the methodology (e.g. experimental, interviews, surveys, examination of documents) and who the anticipated respondents will be (e.g. students, teachers), anticipated number of respondents and how respondents will be selected.(max 4 pages).

Attach copies, as an appendix, of questions or information on the direction of questioning for interviews or surveys and copy of consent form.

Please refer to the research proposal attached with this form to access details of the time frame.

After approval is granted from the college to access student data in AY 2009-2010.

For the Masters dissertation to be legally conducted and supervised by the university advisor, I am required to sign a contract through which I adhere to the British University's research regulations and ethical standards. I am given a 8-month period, during which I can turn to the university advisor for guidance to complete the dissertation.

This quantitative research does not involve any form of surveys or interviews and merely and primarily depends on 1) statistical data analysis of English Foundation student CEPA test scores and GPA. The results will be examined to describe variables in terms of distribution, frequency, central tendency and measures of dispersion. The statistics may include averages, frequencies, cumulative distributions, percentages, variance and standard deviations, and correlations. The variables will be displayed graphically by tables or bar graphs. In this research quantitative data shall be collected. Students' results shall be collected and put into Microsoft (MS) excel format. Once the collection is completed, the data shall be exported to the Statistical Package for Social Sciences (SPSS) software to be analyzed and interpreted. Please refer to the research proposal attached with this form to find information in detail.

Names of students or people involved in the establishment or implementation of the Foundation curricula will be concealed. No reference to any individual names at the college level will be mentioned. However, the name of Fujairah Women's College will appear as well as an introduction on the education role of HCT will be provided in the context section to identify the

reader of the background of the setting.

By the end of the contract, I am required to submit a hard copy of the dissertation which will be marked by the advisor.

Existing Support Facilities and Resources

Identify all existing and available College resources that can assist in the completion of this project.

This research is a quantitative research which entirely depends on FWC database to be completed.

1. The data required is Higher Diploma Foundation student
CEPA English results,

CEPA math results

high school English results,

high school math results

high school Arabic results and their GPA in AY 2009/2010.

2. The data required is Diploma Foundation student GPA in AY 2009/2010.

CEPA English results,

CEPA math results

high school English results,

high school math results

high school Arabic results and their GPA in AY 2009/2010.

The research does not require the use of any available college resources (e.g. library, printers) to complete the project nor it requires any college financial aid. All other needed resources will be taken from the British University of Dubai where it will be supervised.

Publications of All Investigators and Research Personnel

List all publications for each investigator.

Hend Ghamri (main and only investigator): No publications

Clifton Chadwick: View his attached resume and publications list on page 7.

Signatures

In providing their signature each member of the research personnel certifies that the details included in this application are correct and that they will carry out the project accordingly.

Hend Ghamri
Name

Hend
Signature

2 Jan 2012
Date

Clifton Chadwick
Name

Signature

4 Jan 2012
Date

Part B: Ethical Requirement HCT-Fujairah

This form to be completed if the applicant/PI does NOT have approval from a granting institution's ethical committee or if the CRC feels that evidence provided from granting institution's ethical committee is insufficient basis on which to make its judgment. Applicant/PI may be asked to submit further information, depending on answers to questions below.

Does your research involve:

1.	The use of any survey instrument (questionnaires, interviews, focus groups, etc) or any procedure that might be reasonably expected to cause discomfort, embarrassment or psychological or spiritual harm to the participants?	Yes	No
2.	The use of any survey instrument which may be linked directly (e.g. through recording of names) or indirectly (e.g. through the use of a cross-linked code) to an individual?	Yes	No
3.	Disclosure of response by a participant to a survey instrument that could place participants or institutions at risk of criminal prosecution or civil liability or be damaging to their financial standing, employability, professional standing or personal relationships?	Yes	No
4.	Contact, physical pain or emotional distress of any sort?	Yes	No
5.	Any form of physically invasive procedure on participants or the administration of any food, drink or medicine?	Yes	No
6.	The participation of students in activities outside of their normal college-related activities (e.g. completion of survey instruments)?	Yes	No
7.	The acquisition of data about individual or institutions through access to any form of database?	Yes	No
8.	The acquisition of data in which individuals or institutions are directly or indirectly identifiable?	Yes	No
9.	The collection and/or disclosure of personal information that might breach confidentiality of student or employee records?	Yes	No
10.	Processes that potentially exclude and/or disadvantage and/or discriminate against a person or group or which may expose a person or group to discrimination, misrepresentation and or reduction in quality and quality of service?	Yes	No
11.	Payments or inducements to participants for their participation?	Yes	No
12.	Deception of any kind, including concealment of purpose or covert	Yes	No

	observation?		
13.	Any issue of a sensitive nature (e.g. ethical, cultural or religious) not specifically addressed in this checklist?	Yes	No
14.	Commercial potential of the product of this research or the measurement of the potential of a product's commercial viability?	Yes	No
15.	Provision made for secure archiving and for destruction of original data?	Yes	No

Part C: Research Sharing Agreement

Between HCT-Fujairah and Principal Investigator Part C: Research Sharing Agreement

This Agreement is made and entered into between HCT-Fujairah (HCTF) on behalf of the HCT-Fujairah Research Committee and (name of principal investigator)

The purpose of this Agreement is to set forth the terms, conditions, and obligations concerning the sharing of research between the parties.

Therefore, (name of principal investigator) agrees to share research related to the (name of study) research study under the following conditions:

1. The HCTF and (name of principal investigator) agree to maintain research data originating from the (name of study) research study.
2. Each party agrees to maintain this research dataset on the HCTF Library Research Project Database.
3. Both parties agree to maintain confidentiality and privacy safeguards that were originally created as part of the research protocol.
4. Both parties agree not to release information about specific identifiable subjects to anyone.
5. Both parties agree to the boundary conditions of the original proposal under which data sharing was initiated. That is, neither party shall re-specify the proposed response variables, or the proposed covariates, without prior approval of the other. Moreover, each party agrees to cooperate in selective reporting of focused results so as to protect the integrity of subsequent research activities and uses of the shared data by the originating party.