The Influence of Presage and Study Processes on Academic Success of Undergraduate Turkish Students

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Submitted to the
Institute of Graduate Studies and Research
in partial fulfillment of the requirements for the Degree of

Doctor of Philosophy
in
Educational Sciences

Eastern Mediterranean University
June 2012
Gazimağusa, North Cyprus

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ABSTRACT

The aim of the research was to make a preformative evaluation on which presage (personal and institutional) factors have the strongest influence on the learning process factors and academic achievement and which learning process factors have the strongest influence on academic achievement of the 2nd, 3rd and 4th year Turkish undergraduate students studying in the Faculty of Education in the Eastern Mediterranean University in one of the following programs: Guidance and Psychological Counseling, Turkish Language Teaching, Pre-School Teacher Education, Middle School Mathematics Teacher Education, Social Sciences Teacher Education, Music Teaching, or Elementary School Teacher Education. A survey data collection method was conducted to collect data and the data collected were analyzed by using the path analysis method. A Personal Information Questionnaire, Academic Self-Efficacy Scale, Locus of Control Scale, Revised Two Factor Study Process Questionnaire (measuring the use of the deep and surface approach) and Study Behavior Inventory were administered to 829 undergraduates studying in the years and faculty mentioned above. The deep approach to learning was found to have an indirect effect on academic achievement through the use of the long range tasks. Discovery learning, academic self-efficacy and internal locus of control were found to have a direct effect on the use of the deep approach. Results also showed that the higher the academic year and the higher the students' GPA's the more likely the student would be academically successful.

Some disquieting results showed students with high university entrance scores, in their upper academic years, those enrolled in the Guidance and Psychological Counseling program, and those whose mothers had higher levels of education, tended to use the surface approach. Students spending more time on long range tasks than their counterparts, were found to be less academically successful possibly showing they may be lacking sufficient competence in these skills.

Remedial suggestions include policy and curriculum amendments followed by teacher training for the inclusion of effective study skills in the first academic year, and for the instillation of deep approach in teaching and evaluation.

Keywords: learning approaches, deep and surface approaches, study behaviors, locus of control, academic self-efficacy, and academic achievement.

ÖZ

Bu araştırmanın amacı, Doğu Akdeniz Üniversitesi, Eğitim Fakültesi'nde Rehberlik ve Psikolojik Danışmanlık, Türkçe Öğretmenliği, Okul Öncesi Öğretmenliği, İlköğretim Matematik Öğretmenliği, Sosyal Bilgiler Öğretmenliği, Müzik Öğretmenliği, veya Sınıf Öğretmenliği programlarından birinde okuyan 2'nci, 3'ncü, ve 4'ncü sınıf Türk öğrencilerin akademik başarıları üzerinde hangi kişisel ve kurumsal faktörler ile öğrenme süreçlerinin nasıl bir etkisinin bulunduğunu ve öğrenme süreçlerinin üzerinde hangi kişisel ve kurumsal faktörlerinin nasıl bir etkisinin bulunduğunu saptamaktır. Yukarıda bahsedilen 829 üniversite öğrencisine Kişisel Bilgi Anketi, Akademik Özyeterlilik Ölçeği, İç-Dış Kontrol Odağı Ölçeği, Gözden Geçirilmiş İki Faktörlü Ders Çalışma Sureci Anket Soruları (derin ve yüzeysel yaklaşımları içeren), ve Ders Çalışma Envanteri uygulanmıştır. Derin öğrenme yaklaşımının akademik başarı üzerinde uzun vadeli çalışma ödevleri vasıtasıyla dolaylı, buluş yöntemiyle öğrenme, akademik özyeterlilik ve iç kontrol odağının öğrenmede derin yaklaşımın kullanışında da doğrudan anlamlı etkisi olduğu saptanmıştır. Sonuçlar aynı zamanda üst sınıflarda okuyan ve dönem ortalamaları yüksek olan öğrencilerin başarılı olma olasılıklarının daha yüksek olabileceğini göstermiştir.

Üniversite giriş sınavlarında yüksek puan alan, üst sınıflarda okuyan, Rehberlik ve Psikolojik Danışmanlık programında okuyan ve anneleri yüksek öğrenim görmüş olan öğrencilerin daha fazla yüzeysel öğrenme yaklaşımı kullandıklarınının görülmesi kaygı vericidir. Uzun vadeli çalışma ödevleri üzerinde sınıf arkadaşlarından daha fazla zaman

harcayan öğencilerin daha düşük başarı elde ettikleri saptanmıştır. Bu bulgu, bu öğrencilerin, uzun vadeli çalışma becerilerilerinde yeterince ehil olmayabildiklerinin göstergesi olabilir.

İyileştirici çözüm önerileri arasında; öğrencilerin birinci akademik yıllarında etkili öğrenme becerileri dersinin konulması, öğretim metodlarında ve değerlendirme yöntemlerinde Öğrenmede derin yaklaşımın yavaş yavaş aşılanmasının sağlanabilmesini içeren ilkelerin yerleştirilmesi ve yürürlükteki programın ona göre değiştirilmesi ve öğretmenlere bu konularda eğitim verilmesi dahil edilmiştir.

Anahtar Kelimeler: öğrenme yaklaşımları, derinsel-yüzeysel yaklaşım, ders çalışma davranışları, iç-dış konrol odağı, akademik özyeterlilik, akademik başarı.

To My Son, Fadıl

ACKNOWLEDGMENT

I would like to express my deepest gratitude to Asst. Prof. Dr. Hüseyin Yaratan for his endless support and guidance throughout the preparation of this study. I feel indebted to him for the neverending time he wholeheartedly allocated for this study, and for always greeting me with a welcoming smile. I would also like to forward my deepest appreciation to him for the encouragement and motivation he provided when, on occasion, my morale was low. Furthermore, I feel I can never thank him enough for guiding me in developing and deepening my knowledge in our field of study. I feel I have learnt such a lot from him. Without his invaluable supervision, all my efforts would have been short-sighted.

I would also like to deeply thank the thesis monitoring committee members Prof. Dr. Bekir Özer and Prof. Dr. Ahmet Konrot for the time they allocated for the assessments every semester and during my visits to their offices and for their valuable input in terms of advice, comments, as well as suggestions which helped to give direction to and improve the study. I would like to express my deepest appreciation for their kind words, praises, support, guidance and encouragement.

Prof. Dr. Sabri Koç helped me with the final control and amendments of the inventories translated from English into Turkish and I am very grateful to him. I am also greatly indebted to my uncle, Mr. Fuat Memduh, for taking the time to back translate the inventories from Turkish into English, and for his support, encouragement and prayers.

am today. The experiences shared with my sisters Günsel and Aydan have also had a profound influence and I will never be able to thank them enough. My family's significance in this study, as well as in my life, has been immense.

My pride, joy and light of my life, my son, Fadıl, has been a pillar of support, encouraging me all the way, asking me pertinent questions that fire my motivation, and always showing his pride with every gesture he can muster. I feel I have taken away just a little too much precious time from being with him and Szilvi to be able to catch up with my studies at the weekend. I cannot thank them enough for their encouragement, understanding, patience, interest, and unconditional love.

Last but not least, I wish to thank all my students, who initially inspired this study.

I would like to dedicate this study to my son, as he is my light.

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INTRODUCTION

1.1 Overview of the Study

The topic of 'how to be successful' has always been an interest to the human race in all areas of life including in the field of education but the interest of success in the latter field has increased with the growing number of failures and underachievers in higher education. Alongside students, parents, and teachers, this is also a predicament for administrators whose main concern, aside from keeping up the image of the institution, is to also keep up student numbers for economic purposes. With the intent on remedying these problems, research has been done in this area from all facets. Some researchers have studied success, others have studied failures, measuring them against as many different factors as could be mustered. As a result, the following categories directly relating to success in higher education, have been found:

- High school grades and/or what some authors refer to as academic history, that is, all education up until enrollment into university. This includes the university entrance exam scores. These have been found to be especially significantly related to first year performance in higher education (Dickson, Fleet, & Watt, 2000; Eikland & Manger, 1992; Kaufman, Agars, & Lopez-Wagner, 2008;

Kimball, Farmer, & Monson, 1981; Lineweber & Vacha, 1985; McKenzie, Gow, & Schweitzer, 2004; Michaels & Miethe, 1989; Tait & Entwistle, 1996).

- Socio-economic status (SES) has been found to have a strong correlation with academic achievement (Sirin, 2005). Parents are part of the socio-economic status of students and their education level is another factor that has been researched in conjunction with academic success. Students whose parents have not gone as far as university have been classified as first generation students (FGS), and studies show that these students are prone to dropping out of university before completing their degrees regardless of their high school grade and other sections of their socio-economic status (Prospero & Vohra-Gupta, 2007). Family interest and support show significant relations to academic success (Entwistle, Thompson, & Wilson, 1974; Rhamie & Hallam, 2002) as does high expectations (Rhamie & Hallam, 2002).

- Self-efficacy has been linked to good grades whereby the higher the students' belief in themselves, the more likely they will achieve academic success (NSSE, 2006; Rhamie & Hallam, 2002; Warkentin, Griffin, & Bates, 1994; Zimmerman, 2000).

- Students with internal locus of control have been found to be constructive in their approach to learning which has been found to positively influence their exam results (Wigen, Holen & Ellingsen, 2003).

- The learning approach a student uses in order to learn is a very important factor that determines whether they will be successful or not (Kember, 1996; Kember, 2000).

- Kember (1996; 2000) asserts that the intention to either understand the material, that is, to use the "deep" approach or just to memorize it, thereby using the "surface" approach will predict whether success will follow or not. Research shows significant relationships between the "deep" approach and academic success followed by the "strategic" approach (Ramsden, 1983; Reid, Duval & Evans, 2007) but the "surface" approach, is found to be the approach best to avoid (Ramsden, 1983). Kember, Jamieson, Pomfret, and Wong (1995) found that the use of the deep approach together with sufficient time spent on study produced academic achievement.

- Kember (1996), reviews findings of a learning approach, mainly used by Asian students, who are high achievers, that combines both the "deep" and "surface" approach. He postulates that the reason for this could be due to their medium of instruction not being in their mother tongue. This may mean they would have to rely on memorization as well as deep learning. The other reason for the dual use could be due to cultural traditons that depict diligent study.

- The use of effective study habits/behaviors has shown a positive significant relationship to academic success (Al-Hilawani & Sartawi, 1997; Crede &

Kuncel, 2008; Fuente & Cardelle-Elawar, 2009; Need & De Jong, 2001; Rita, 1996).

- The time students spend on their academic tasks is an important element by way of how and what they study when aiming for academic achievement. A lot of research has been conducted on this topic and results show that enough time spent on academic activities plus the use of the right approach can lead to academic success (Kember et al., 1995).

All of these factors have been shown to point to academic achievement to some extent either directly or via other factors. Biggs' (1978) Presage-Process-Product Model (3P Model) (Figure 1) shows this stance very well. Prior to the learning process the student goes through, the model shows that each student has their own unique cognitive style, personality, Intelligence Quotient (IQ) and home background (presage) and points out that the learning process they will embark on will depend on the subject area, teaching method, evaluation modes and procedures, and course structures (situational). This will effect their motives for studying and the strategies they use (process). As a direct result of any of the factors or via the process factors there is an academic outcome (product). This model has been updated and modified several times (Biggs, 1985, 1987a; 1987b).
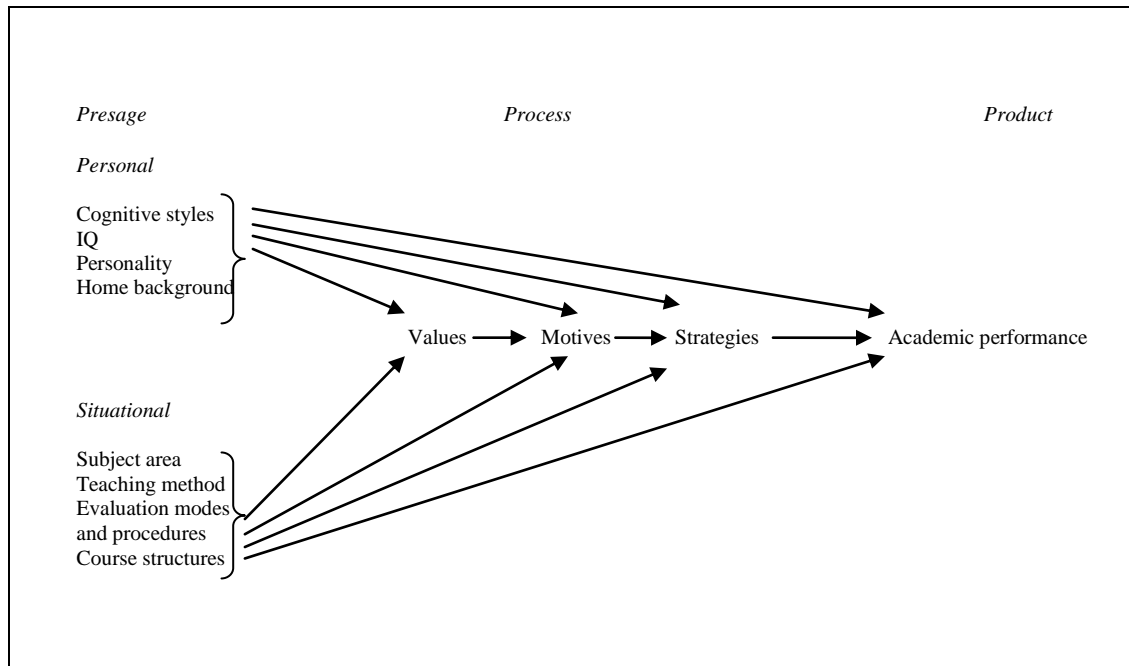
Figure 1. General model of student learning – presage-product-process model
(Biggs, 1978)

In order to learn more about the factors that produce academic acheivement much research has been done with different combinations of the Biggs' 3P model as well as with different variables such as locus of control and self-efficacy.

Some researchers have concentrated on the personality elements of the presage factor checking demographic factors with learning approaches and academic achievement (Burton & Nelson, 2006; Burton, Taylor, Dowling & Lawrence, 2009; Duff, Boyle, Dunleavy, & Furguson, 2004), others have concentrated on the effects of teaching and the teaching environment on learning approaches and its consequence on academic performance (Entwistle & Tait, 1990).

A lot of research conducted on learning approaches and academic performance has used Biggs, Kember, and Leung's (2001) Revised Two-factor Student Process Questionnaire

(R-SPQ-2F) or Entwistle, Tait, and McCune's (2000) Approaches and Study Skills Inventory for Students (ASSIST) where which approaches lead to academic achievement have been investigated.

Research has also been conducted on the effect of effort on academic achievement (Borg, Mason, & Shapiro, 1989; Kember et al., 1995; Krohn & O'Connor, 2005; Michaels & Miethe, 1989).

Some research has been qualitative but the majority has been quantitative in nature. The bulk of the quantitative studies have used factor analysis, validity and reliability measures, regression and correlation as a means of analysis. Several studies (Duff et al., 2004; Leung, Wang, & Olomolaiye, 2008; Zeegers, 2004) have used structural equation modelling to find out the strong links between independent and dependent variables.

The majority of this research has been conducted in Europe, Australia, Hong Kong and the United States of America (USA). Developing countries are also contributing to the literature in this field slowly but unfortunately not at the rate of their counterparts.

The sense of urgency to unearth the factors effecting academic success stems from the ever increasing number of students enrolling each year into universities worldwide (Kinzie, 2007; NSSE, 2006; Ploeg, 2006; Psacharopoulos, 1991; Tait & Entwistle, 1996; UNESCO, 2006) with the figures being even more prominent in the developing countries (Psacharopoulos, 1991). Total enrollment for the developing countries have been stated to have increased by fifty percent just between the years 1990 through to

1997, from twenty nine million students to forty-three point four million students (UNESCO, 2006).

Another developing country is Turkey, where there has also been an increase in the student population desiring to pursue higher education. For example, in 1990 the number of students applying to get into the universities via the state run Student Selection Examination (ÖSS[1]) was 892,975, at the turn of the century this number rose to 1,414,823 and in 2005 increased to 1,851,674. Unfortunately, the average percentage of students who are successful in getting enrolled in a higher education institution out of those who desired to pursue a higher education in Turkey, averages around 30% over the years of 1990 through 2004 (T.C.YÖK[2], 2005). This leaves 70% to look outside of Turkey to further their education.

On seeing this demand, more and more universities have been established in the Turkish Republic of Northern Cyprus (TRNC) in the last twenty years and have become an attractive alternative for these students. Figures show that 3,382 students in the 1990 – 1991 academic year, 13,877 students in the 2000 – 2001 academic year, 20,436 in the 2004 – 2005 academic year and a grand total of 27,339 students in the 2006 – 2007 academic year from Turkey enrolled in one of the seven universities on the Turkish section of the island (KKTC, MEB[3], 2007).

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[1] Öğrenci Seçme Sınavı, Student Selection Examination.
[2] Türkiye Cumhuriyeti Yüksek Öğretim Kurumu, Republic of Turkey, Higher Education Council.
[3] Ministry of Education and Culture of the Turkish Republic of Northern Cyprus, Kuzey Kıbrıs Türk Cumhuriyeti, Milli Eğitim ve Kültür Bakanlığı

1.1.1 Reasons for the Growing Demand

Of course the reasons for the growing demand in pursuing a higher education can be accounted for with the increase in population, more so in the developing countries than the developed ones, but there are other opportunities which render this demand to grow. First, as a country develops, the demand for higher education increases so in developing countries there is a higher increase in student population from year to year. Second, it has gradually become the 'norm' to be a university graduate and most people want to belong to that 'norm'. Third, high school leavers want to be with their peers so they follow their path. Fourth, being a university graduate can mean higher pay and status at work as well as more opportunity in finding a job as it would put the graduate in a better position to compete with their peers. Fifth, in some developing countries, for example in Turkey and North Cyprus, doing military service is compulsory, but being a university graduate enables them to do this at a higher rank. Last, it enables the graduate to cope with the demands of life whether it be economical, social, political and/or cultural (NSSE, 2006). It will endow the individuals to better cope with problems they may face in life.

1.1.2 Reasons for More Students Being Able to Study at University

The increase in demand for higher education has resulted in the establishment of many privately owned profit oriented universities. In order to be able to compete with each other, these universities have lowered their admission requirements (Ploeg, 2006), thus enabling more and more students from diverse academic backgrounds to enroll into higher education (Zhao, Kuh & Carini, 2005) and this brought with it problems regarding the increasing number of underachieving students.

While the Turkish students' university entrance requirements (of which the universities in North Cyprus are a part of) are to gain a minimum of 185 points in the Student Selection Examination (ÖSS), (T.C.YÖK, 2007), the requirements for Turkish Cypriot students to be able to enroll into the universities in the TRNC, are to be able to pass the university's entrance exam, obtain the minimum marks required by the program of the student's choice and pass the English Proficiency Exam if the student is going to be studying in a program where the medium of instruction is in English. Students not able to gain entrance to their first choice of program were placed into programs of their second, third or even up to their eighteenth choice. As from the 2007 – 2008 academic year however, the entrance exam the Turkish Cypriot students entered, did not have a minimum attainment level so they were accepted to the program of their choice according to the marks they gained and the quotas allocated for each program. The prerequisite for being able to enter the entrance exam was a lycee diploma.

1.1.3 Problem Statement

As a result of the increased number of students enrolling into further education worldwide over the past two decades, research shows that there is an increase of first generation students, that is students who are first in their immediate family to ever enroll into university (Cliff, 1995; NSSE, 2004) bringing with them problems, to the extent that it has become a field of study by itself (Cliff, 1995). There is also an increase of students from diverse cultures and academic backgrounds (Zhao et al., 2005) i.e. with high and low high school grades. Research shows that performance in the first year of university is significantly positively affected by high school grades (Dickson et. al., 2000; Eikland & Manger, 1992; Kimball et al., 1981; Lineweber & Vacha, 1985; McKenzie et al., 2004; Michaels & Miethe,1989; NSSE, 2006; Tait & Entwistle, 1996).

So, the students with poor backgrounds and poor high school grades start off with a handicap. Some enter university with firmly set study habits that may not be suitable for university education (Entwistle, McCune & Hounsell, 2002). It can be assumed that a student with poor high school grades may not have mastered the content that has to be covered and also the necessary study skills, methods and learning approaches to adequately cope with university level studies.

The transition from high school to university in itself brings about many problems of its own (Eikland & Manger, 1992). Put together with the profile of students mentioned above, research shows that additional problems such as, not being able to retain first year students, have been found (Tait & Entwistle, 1996; Need & De Jong, 2001). For example, studies show that 45% of students in the two year programs leave in the first year and 25% of students studying in four year programs leave before completing their degrees (Kinzie, 2007). It has been seen that students drop out when they find they can't fit in or belong (Astin, 1984; Chickering & Gamson, 1987) or when they encounter failure and/or underachievement (Eikland & Manger, 1992; Tait & Entwistle, 1996).

1.1.4 Significance of the Study

There are six universities in North Cyprus out of which the Eastern Mediterranean University was the first to be established on the island. As from 2009 more and more universities were rapidly established in Turkey, nearly covering every administrative providence (il) and some administrative districts (ilçe) bringing the total number of universities to 210 (Gazete 5, 2011) by 2011. As a result, there was fierce competition from the other universities in North Cyprus regarding their use of marketing strategies, one of which was lowering entrance requirements (even eliminating the entrance exam

in some cases) in order to gain and retain students. This has enabled students to enroll into any program of their choice. Consequently students with vast diverse academic backgrounds have found themselves studying in the same class.

'Student satisfaction' has always been an important factor in the mission of educational institutions, but with the surplus supply of available universities, this term, has started to take on a different connotation such as not putting pressure on the student to study and being more lenient in grading. This can, at times, prove to be frustrating for academic faculty and the administration. This is the case in the Eastern Mediterranean University (EMU), who give great importance to forever improving their quality of education, as are many other universities in developing countries around the world (Watkins & Regmi, 1990). EMU takes pride in its many accreditations with British, European and American educational bodies where deep, meaningful, and longlasting learning is important, and is continuously looking into benchmarking and acquiring further accreditations in order to enhance the quality of their programs.

An especially important faculty is the Faculty of Education where they are preparing the new cohort of teachers who will set the scene for the future new generation of educationalists. The present educators will be responsible for the result to a certain extent. It is therefore important to look at how students in this faculty are approaching their learning, what sort of study behaviors they have, how much time they spend on them and together with their demographic factors and the institutional factors try to determine which and how much of these effect academic success.

In this study the presage, (both personal and situational, which will be labeled 'ınstitutional' henceforth), the process (learning approaches with the additon of study behaviors and time on task), and product (academic performance by means of course grade) factors will be analyzed via a Path Analysis using AMOS version 18.00 program to find out the significant links to academic success in higher education in a developing country. No known research has been conducted with these factors on undergraduate students in North Cyprus.

1.2 Purpose of the Study

The purpose of this study is to investigate the influence of presage (personal and institutional) factors on academic achievement and of learning processes (learning approaches, study behavior and time on task) on academic achievement (course grade) of the 2nd, 3rd and 4th year Turkish undergraduate students studying in the Faculty of Education in the Eastern Mediterraenan University (EMU). The research questions are as follows:

1. How do personal factors (gender, age, nationality, university entrance score, year of study, present GPA, fathers' education level, mothers' education level, academic self-efficacy, and locus of control), and institutional factors (program, teaching methods, and evaluation methods) relate to learning approaches, study behavior, and time on task?

2. How well do learning processes (learning approaches, study behaviors and time on task) predict academic success controlling for personal factors (gender, age, nationality, university entrance score, year of study, present GPA, fathers' education

level, mothers' education level, academic self-efficacy, locus of control) and institutional factors, (program, teaching methods, and evaluation procedures)?

All the variables leading to the success of a student in higher education mentioned earlier in this chapter, have been sumarized in the following model which has been adapted from Biggs, 1978 (Figure 2). This model forms the basis of this study. Variables added to the model for this study, have been written in italics.

Presage	Learning Process	Outcome
Personal		
University entrance score		
Demographic		
a. Gender		
b. Age		
c. Nationality	Learning approaches	
d. Father's education level		
e. Mother's education level		
f. Year of study		
g. Present GPA	Study *behavior*	*Academic* success
Academic self-efficacy		
Locus of control		
Institutional	*Time on task*	
Program		
Teaching method		
Evaluation procedures		

Figure 2. 'General model of study processes' (Biggs, 1978 p. 267) with additions in italics

1.2.1 Independent Variables

The independent variables are as follows: personal factors (gender, age, nationality, university entrance score, year of study, present GPA, fathers' education level and mothers' education level, academic self-efficacy, and locus of control), institutional

factors, (program, teaching and evaluation methods which are explained in section 1.3), and learning processes (learning approaches, study behavior and time on task).

1.2.2 Dependent Variable

The dependent variable for this study is academic success which will be measured as course grade.

1.3 Definition of Terms

GPA: Grade Point Average (GPA) is a score that is reached by the summation of the points allocated for each grade multiplied with the credit for each course taken by a student in one semester.

Academic self-efficacy: Academic self-efficacy is the students' belief in themselves that they can achieve their academic goals.

Locus of control: Locus of control (LOC) is a person's belief system based on how in control they feel about their own lives. There are two types of locus of control; internal and external. Individuals with high internal locus of control believe that outcomes are causes of their own effort and if any outcome is not to their liking they take responsibility to amend them. Individuals with high external locus of control believe that outcomes are caused by others whereby they feel they have no control over and so they do not try to take responsibility to amend the outcome.

Program: Program refers to undergraduate programs the students are enrolled in under the different departments within the Faculty of Education.

Teaching methods: The teaching methods referred to in this study are expository teaching and discovery learning.

Evaluation methods: The evaluation methods referred to in this study are based on the homework, quiz, project and examinations, the percentage of the total marks allocated to them and the level of learning required for each segment based on Bloom's taxonomy.

Learning approaches: The learning approaches consists of two different types; the deep approach where the student has the intention to really understand the material and the surface approach where the student only has the intention to pass the course by rote learning.

Study Behavior: Study behavior refers to the preparation of long range and short range tasks a student engages in when studying.

Time on Task: Time on task refers to the number of hours a student spends on study tasks.

Course Grade: Course grade refers to the grade the student received for the course which was chosen for administering the instruments selected for this study.

Chapter 2

LITERATURE REVIEW

The literature review focuses on the main variables being studied in the research questions under the categories of presage (personal and institutional) factors and study processes as stated in the thesis title.

2.1 Presage

The following is the literature review conducted based on the 'personal' segment of the presage category.

2.1.1 University Entrance Score

Being accepted to a four-year program in universities in Turkey and North Cyprus is based on the score attained by the applicant in the Student Selection Examination (ÖSS), whereas in the United Kingdom, United States of America and most universities in Europe, being accepted to university is based on certain qualifications attained in high school eg. GCSE's (General Certificate of Secondary Education), TOEFL (an English language level examination), etc., or GRE scores which is a type of general university entrance score. One study, conducted by Orlando (2005), which looked at how reliable the GRE scores were in predicting graduate success, found that there was a positive correlation, but it differed between field of study. He explained that the reason for this was due to the GRE being composed of three "tests: analytic, verbal, and quantitative" (p.2) and that the disciplines utilizing these skills to a greater level will also have

students' GRE scores correlating higher with with graduate achievement (Orlando, 2005). The literature on the effect of university entrance score *per se* on academic achievement in higher education did not seem to be a popularly researched topic, instead, much research on high school grades and academic achievement in higher education was found.

High school grades have been found to be especially significantly related to first year performance in higher education (Eikland & Manger, 1992; Dickson et al., 2000; Kimball et al., 1981; Lineweber & Vacha, 1985; McKenzie et al., 2004; Michaels & Miethe, 1989; NSSE, 2006; Tait & Entwistle, 1996). As high school grades and university entrance examinations are the qualifications used as tickets of entry to higher education for the developed and developing countries respectively, the literature on the effect of high school grades on academic performance in higher education will be taken into consideration.

2.1.2 Demographic Factors

Demographic factors such as gender, age, and nationality are usually part of most education based research. Other factors such as parental income, education level and occupation which have been listed as the main and most used components of soco-economic status (SES) (Jeynes, 2002), are also used as components of demographic factors. In some studies, however, it has been seen for family background to be only "measured by father's education level" (Engin-Demir, 2009, p.24), i.e. not taking into account the mothers' education levels at all. Nevertheless, demographic factors have been found to have a strong correlation with academic achievement especially parental education (Sirin, 2005). Similar results have been found even with research on primary

school students' demographic factors. A study conducted on 719 urban poor Turkish primary school students dwelling in 'squatter settlements' in Turkey found that students whose fathers have secondary school level of education and above have a tendency to be more academically successful (Engin-Demir, 2009). Studies which have taken parents' education levels separately have mixed results. For example a study on 202 American undergraduate students showed that only their fathers' education level had positive correlations with Grade Point Average (GPA) (Nelson, 2009), and an American national logitudinal study on 12,686 adolescents between the ages of 14 to 21 from the years 1979 to 1994 found that mothers' education levels together with their mathematics and reading ability scores significantly positively effected their children's mathematics and reading achievement (Eamon, 2002). A longitudinal study of 1,927 respondents, who graduated 14 years prior to when the study was conducted, found that the parents' education significantly predicted students' educational attainment at age 32 (Wang, Kirk, Fraser, & Burns, 1999).

A positive link with high fathers' education levels and high deep and achieving approaches have also been found (Biggs, 1985). When the effect of parental education levels on learning approaches was studied on students of three different cultures, namely Hong Kong, China, and the USA, it was found that only the American students' fathers' level of education positively affected the deep learning approach (Zhang, 2000).

The parental education factor tends to also indicate parents' income and has been found to be the "most commonly used" (Sirin, 2005 p. 434) factor. Research conducted after a mega-analytic SES literature review made by Sirin (2005) of SES studies published

between 1990 and 2000, continues to show parental education to predict academic performance (Kaufman et al., 2008) or just fathers' education level to significantly predict academic achievement (Wintre, Dilouya, Pancer, Pratt, Birnie-Lefcovitch, Polivy & Adams, 2011). Research also reveals that there has been a steady increase in the number of students pursuing their own education while their parents have not received any university education (Cliff, 1995; NSSE, 2004). These students, who have been classified as first generation students (FGS), have brought with them problems to the extent that it has become an area of interest in itself (Cliff, 1995). FGS are prone to dropping out of university before completing their degrees regardless of their high school grade and socio-economic status (Prospero & Vohra-Gupta, 2007).

2.1.3   Grade Point Average

Students' GPA is a score that is reached by the summation of the points allocated for each grade multiplied with the credit for each course taken by a student in one semester. A Cumulative Grade Point Average (CGPA) is the summation of all the courses taken so far within the program calculated in the same way. The literature on this topic shows present (or sometimes referred to as previous) GPA to be "the best predictor of grades" (Davidson, 2002, p. 28) and in some cases the "single best predictor" whether the mode of course is face-to-face or online (Kiriakidis, Decosta & Sandu, 2011, p. 21). This trend seems to carry on with graduate study also. A study on 489 students enrolled in a Master of Business Administration program in a Malaysian university found that the students' who had higher undergraduate CGPAs were higher achievers than their counterparts (Sulaiman & Mohezar, 2006). A meta-analysis conducted by D'Agostino and Powers (2009) on 123 studies concerned with teachers' higher education GPAs and present

teaching proficiency, found that overall teachers' previous GPA significantly predicted their level of teaching.

2.1.4 Self-Efficacy

Self-Efficacy is another important predictor of academic achievement and is "partly determined by people's beliefs that they can attain the goals they set for themselves" (Bandura, 1989, p. 47). It focuses on "performance capabilities" (Zimmerman, 2000, p. 83) but the self-efficacy belief in one's ability to make good use of one's knowledge and skills to achieve a goal is the key issue (Bandura, 1993). Hence, it is a construct that can be considered as enabling students to predict the level of their performance in regards to their ability to perform a task (Zimmerman, 2000).

Reasearch on underachievers showed that having a low concept of oneself or having low self-confidence is like a viscious circle of not believing in ones ability, so not bothering to study. These students give up more easily and therefore get poor marks and continue to lose their confidence, and their belief in their incapability is strengthened (Lau & Chan, 2001). Students who have high self-efficacy, on the other hand, believe in their ability to perform a task, do not hesitate to tackle it, they work harder and are less likely to give up than those students who have lower self-efficacy (Bandura, 1989; Schunk & Pajares, 2002). They "approach difficult tasks as challenges to be mastered rather than as threats to be avoided" (Bandura, 1993, p. 144). This in return is more likely to lead to academic achievement because the more they reach the goals they value, the more "they experience a sense of satisfaction" which fuels intrinsic interest (Bandura, 1989, p. 48). Achieving success at mid posts towards the main goal, such as quizzes and midterm examinations gives the individual a motivational indicant, hence, boosting their self-

efficacy (Bandura, 1989). Those who are in doubt of their capabilities will more easily give up at the first experience of failure (Bandura, 1989).

Decades of research on the effects of self-efficacy in education has shown it to be a predictor of student motivation, learning, (Zimmerman, 2000) and academic achievement (Çalışkan, Selçuk & Özcan, 2010; Pintrich & Schunk, 1996; Schunk & Pajares, 2002, Zeegers, 2004). Warkentin et al., (1994) studied "the relationship between college students' study activities, content knowledge structure, academic self-efficacy and classroom achievement" (p. 1) and found that "self-efficacy contributed towards a direct effect on achievement" (p. 8) and went as far as to say that they found self-efficacy to be the "overall best predictor of classroom achievement" (p. 8).

Although much of the research on self-efficacy shows that it predicts academic achievement, Schunk and Pajares (2002) point out that this may not always be the case as students who perceive a task to be easy may have a high sense of self-efficacy but may not put in the necessary effort to achieve a high score. Fenollar, Roman & Cuestas, (2007), in their study of 553 Spanish undergradutes enrolled in different faculties, found that high self-efficacy did not directly effect academic performance.

Studies incorporating other variables such as the learning approaches with self-efficacy have found high academic self-efficacy to be related to the use of deep or strategic learning approaches and vice versa (Cassidy & Eachus, 2000; Fenollar et al., 2007).

2.1.4.1 Self-Efficacy Inventories

The inventories or scales used to determine the level of the students' self-efficacy are varied. Some researchers developed and used their own Self-Efficacy Scales (Warkentin et al., 1994; Makinen & Olkinuora, 2004; Papinczak, Young, Groves & Haynes, 2008; Prat-Sala & Redford, 2010) and others used the translated version of The General Self-Efficacy Scale designed by Jerusalem and Schwarzer in 1979 (Schwarzer, Mueller & Greenglass, 1999).

2.1.4.2 Turkish Research Conducted on Self-Efficacy

The bulk of the research carried out on self-efficacy by Turkish researchers seems to begin after the turn of the century (2000). Some researchers developed and used their own self-efficacy scales (Cantürk-Günhan & Başer, 2007; Çalışkan et al., 2010), some translated and adapted self-efficacy scales into Turkish such as The General Self-Efficacy Scale designed by Jerusalem and Schwarzer in 1979 was translated by Yılmaz, Gürçay & Ekici (2007). Others used the already translated Turkish version of the Academic Self-Efficacy Scale by Yılmaz et al., (2007) (Topkaya, Yaka & Öğretmen, 2011; Durdukoca, 2010; Odacı & Berber-Çelik, 2011) and some researchers used the sections related to self-efficacy in other inventories (Ergul, 2004; Klassen & Kuzucu, 2009).

The Turkish researchers' studies on self-efficacy were not always concerned with academic achievement but with other factors concerning students or teachers such as gender and type of education (Akbaş & Çelikkaleli, 2006), teachers of religious culture and moral knowledge and their demographic factors (Coşkun, 2010), and year of study (Durdukoca, 2010). A Turkish researcher's study that was concerned with the

relationship between academic self-efficacy and achievement found similar results with most of the researchers in the rest of the world, in that high academic self-efficacy had a significant positive effect on academic achievement (Ergul, 2004).

2.1.5 Locus of Control

Rotter's (1966) locus of control theory is based upon an individuals' belief system. This belief system consists of two factors. One is internal locus of control where individuals believe that events or outcomes are a result of one's own plans, hard work, abilities, motivation, persistence and effort and if events or outcomes are not to their satisfacton these individuals take responsibility and action to amend the situation (Gifford, Briceño-Perriott, & Mianzo, 2006). The other is external locus of control where individuals believe that events or outcomes are a consequence of external factors which are seen to be beyond the control of the individual and when events do not turn out to be according to their satisfaction they look to blame others.

Students who have internal locus of control believe that they have control over their own lives and learning and those who have external locus of control believe in fate (NSSE, 2006). The term 'locus of control' only started to be regularly used in the literature in the early 1970's, for before then it was referred to as "the construct of internal versus external control of reinforcement" (Kormanik & Rocco, 2009, p. 467). A longitudinal study conducted 14 years after students had graduated from high school found locus of control as well as parental education and self-esteem to affect students' educational and occupational achievements (Wang et al., 1999). A meta-analysis of studies on study strategies and their effect on academic achievement published between 1968 and 1993

showed that internal locus of control were found to be positively related to academic achievement (Purdie & Hattie, 1995).

During the past 30 years many studies have been conducted on locus of control (LOC). A lot of this research has looked into the relationship between LOC and academic performance, the majority of the results showing that LOC may predict academic performance. For example Gifford et al., (2006) in a study of over 3,000 first year undergraduates found that those who had self-reported high internal LOC on entering university received higher GPAs than those who had high external LOC. Findley and Cooper (1983) made a literature review on research looking at LOC and academic performance and Kalechstein and Nowicki Jr. (1997) followed up this review by making a meta-analytic examination of these studies published between 1983 and 1994. Both concluded that internal LOC was a significant predictor of academic achievement. Research conducted since then provide further indication that internal LOC positively correlates to academic success (Wang et al.,1999; Gifford et al., 2006) and that external LOC is more likely to result in lower grades (Wood, Saylor, & Cohen, 2009).

There were, however, results of some studies which did not show LOC to be predictive of academic performance (Bozorgi, 2009; Brenenstuhl & Badgett, 1977; Watkins, 1987; Wigen et el., 2003), some which only show that high external LOC correlate with low academic achievement (Wood et al., 2009), and others that found that the "degree of internal LOC was not related to first year academic success" (p. 227) and this result was not found to change with maturity (Watkins, 1987).

Studies on LOC have used many variables. One other variable that has been found to be predictive of academic success is learning approaches. It has been found that students' internal LOC affects their approach to learning i.e. it develops their deep approach to learning (Biggs, 1985; Cassidy & Eachus, 2000), making them more constructive in their approach and this in return positively influences their exam results (Wigen et al., 2003). A research conducted on Nepalese tertiary students also found a correlation between deep and achieving approaches with internal LOC (Watkins & Regmi, 1990). Although Watkins (1987) in his study of 744 undergraduates in an Australian university, did not find any significant correlation between a high internal LOC predicting the use of the deep learning approach, he explained the reason could be due to the students' thinking that the use of the deep approach was not necessary for academic achievement. Cassidy & Eachus (2000) found that not only did internal LOC point to the use of the deep and achieving approach, it also correlated with high self-efficacy beliefs but did not directly predict academic achievement in this study. External LOC, however, correlated with the use of the surface approach.

Research on LOC conducted in Turkey and North Cyprus focused on different aspects such as LOC and level of assertiveness (Dinçyürek, Çağlar & Silman, 2009), LOC, thinking skills and the affect on academic achievement (Başol & Türkoğlu, 2009), LOC, social self-efficacy and internet addiction (İskender & Akin, 2010), affects of gender, socio-economic status and accommodation on LOC (Serin, Serin, & Şahin, 2010). One study found males to have higher external LOC (Cetinkalp, 2010), another found females to have higher external LOC (Dinçyürek et al., 2009). Cetinkalp (2010) found students who have learning goals (i.e. those who focus on developing competence) also

had internal LOC. All but one used Rotter's (1966) Locus of Control Scale, where two used Dağ's (1991) and the other used a Phd student's translated version of Rotter's LOC Scale. The final study used their own published Academic Locus of Control Scale (Akın, 2007).

The following is the literature review conducted based on the 'institutional' segment of the presage category.

2.1.6 Fields of Study

It has been found that students' CGPAs vary amongs fields of study with higher scores being obtained for language, education, humanities, maths and arts and lower scores for agriculture, engineering and public administration fields of education (NSSE, 2006). Although the use of the deep approach to learning is a preferred approach and one that many studies have shown to have a significantly positive effect on academic achievement, research findings have pointed to students studying "engineering and the physical sciences (to) use (the) deep approach to learning less frequently than students from other fields" (Laird, Shoup, & Kuh, 2005, p. 17).

2.1.7 Teaching Methods

In the last decade or so, the education world has been steered towards a more student-centered approach to teaching and a less traditional expository method of teaching. The expository method of teaching is based on a preplanned lesson which the teacher firmly follows by showing or verbally presenting the information in class for a predetermined time. The teacher is seen as an authoritative figure on the subject and the dialogue is, for the most part, one way from the teacher to the student, unless questions are invited and accepted by the teacher (Terzi, Eryılmaz, Anadol & Kaya, 2009). One of the student

centered methods of teaching is the discovery learning method. This method stems from the constructivist learning theories initiated by John Dewey, Jean Piaget, and Lev Vygotsky (Castronova, 2002). Hilda Taba's (1963) research on learning by discovery takes her back to as early as 1904. During the 1960's many curriculum based projects on learning by discovery or "inquiry training" (p. 73) were instigated and worked upon (Kaufman, 1971). The philosophy behind this method of learning was that the learner would be active in their own learning, their fuel of motivation would be their curiosity (Taba, 1963) and with the teacher in the role of a facilitator, the student would discover the information by way of deduction (Kaufman, 1971). The debates and discussions on the pros and cons of discovery learning continued during the sixties and seventies and seemed to thought to be "limited to science and mathematics" (Taba, 1963, p. 310). Today, at the turn of the century, discovery learning is seen as a preferred method of learning as it takes the student away from rote memorization and provokes students "to analyze and interpret information to understand what is being learned" which induces deep and meaningful learning (Castronova, 2002, p. 2). Discovery learning includes "experiments, exploration, simulation-based learning, problem-based learning, inquiry-based learning, and Webquests" (Coffey, 2009, p. 2).

Teaching methods adopted by university teachers are largly based on the teachers' beliefs and prior experience, and the method of teaching used together with how this is perceived by the student, usually determines the type of learning approach the student will adopt (Entwistle et al., 2002).

The topic concerning students adopting a learning approach based on the perception of the teaching approach used by their teachers, was revived in the 1990's. It was found that learning strategies used by the students changed according to the learning context (Eley, 1992; Richardson, 1994; Vermetten, Lodewijks, & Vermunt, 1997). The perceived 'good teaching', which was more likely to result in the deeper approach to learning, was defined "as supportive of student learning, as having clearly defined goals and structure, as explicitly focusing on the mental processing in learning, as emphasizing a capacity for independent learning, and as providing support for modes of learning and study typical of higher education" (Eley, 1992 p. 250) or as adjusting the material and the pace to be presented, so it was suitable for the level of the students, making sure it was clear and in a logical order, being ready to explain the material in such a way so as to ensure understanding, and having enthusiasm towards their teaching and empathy towards their students (Entwistle & Tait, 1990). So, if teachers especially focus on the mental processes in learning when designing their teaching methods, literature shows that this will induce the use of deep learning approach in the student (Eley, 1992; Speth & Brown, 1988). On the other hand, Haggis argues that if a student hasn't or doesn't use the deep approach, it may be difficult to get them to use it "if it is not 'already there" (Haggis, 2003, p. 94).

Meyer and Muller (1990), in their attempt to make clearer the associations between perceptions of the learning context and approaches to studying, discovered that these perceived contexts were stronger for the deep approach, and that there are "important linkages between learning context, the approach taken, and learning outcome" (Meyer & Muller, 1990, p. 149). So, according to the literature, teachers can change their students'

approach to learning by changing their teaching methods (Eley, 1992). It is argued, however, that only changing the environment does not always mean that it will change the perception of how the "student sees the world" (Haggis, 2003, p. 93).

2.1.8 Evaluation Procedures

Alongside the teaching methods, the evaluation methods that teachers use also influence the type of learning approach students will use (Warren, 2004). Further studies into these approaches uncovered that students study according to how they perceive they will be asked questions on the material (Butler & Cartier, 2004; Marton & Saljo, 1976b; Ramsden, 1989; Ramsden & Entwistle, 1981; Struyven, Dochy & Janssens, 2002) and that the actual teaching method determines the approach the student will embark on (Butler & Cartier, 2004; Marton & Saljo, 1976; Ramsden, 1989; Ramsden & Entwistle, 1981). For example, students will use the Surface Approach if they are overloaded and if assignments and exams require them to regurgitate the material; they will use the strategic approach on receiving information on how they will be assessed and what is required of them to pass (Richardson, 1994); and they will use the deep approach if complex examination questions are asked (Davidson, 2002).

Rust (2002), on conducting a literature review on the "impact of assessment on students learning" (p.145) stated that in the United Kingdom students are sometimes unable to see the link between learning outcomes and assessment. He also stresses that teachers need to be careful when writing exam questions because sometimes they may not actually assess what they intended. He gives the example of using 'evaluate' in an exam question and says that just by using this word will not always mean the student is actually evaluating a topic but only regurgitating notes taken in class regarding

evaluation discussed. In order to overcome these problems he suggests Biggs' (1999) Constructive Alignment Model. Biggs (2003) explains 'Constructive Alignment' to refer to the integration of all segments of education from the teacher in the classroom, through the relevant program where the curriculum was designed, right up to the higher level executive management. He stresses that if each element stands on its own without amalgamation, then "only the 'academic' students" will be using the "higher-order learning processes" (p.1) whereas it is important to inbuild into the education system a method whereby all students will steer towards using these learning processes. The four stages of creating this Constructive Alignment as proposed by Biggs (2003) are:

1. Defining the intended learning outcomes (ILOs);

2. Choosing teaching/learning activities likely to lead to the ILOs;

3. Assessing students' actual learning outcomes to see how well they match what was intended;

4. Arriving at a final grade. (p. 2)

Reeves (2006) also stresses that there should be alignment in every educational setting and this should consist of the following factors "1) goals, 2) content, 3) instructional design, 4) learner tasks, 5) instructor roles, 6) student roles, 7) technological affordances, and 8) assessment" (p. 302) and points out that the factor mostly found out of place is assessment. Another general predicament, aside from the affective and psychomotor domains being overlooked or even disregarded, is the lower levels of the cognitive domain (knowledge, comprehension, and application) are more frequently used than the

higher levels (analysis, synthesis, and evaluation) as they take up less time and effort (Reeves, 2006).

Evaluation also has an effect on the types of learning approaches students use i.e. the deep approach or the surface approach (Diseth & Martinsen, 2003; Rollnick, Davidowitz, Keane, Bapoo & Magadla, 2008; Struyven, Dochy, & Janssens, 2002). Studies show that heavy work loads and not enough feedback lead to the use of the surface approach (Gijbels & Dochy, 2006) and the use of essay type exam questions leads to the use of the deep approach (Struyven et al., 2002).

2.2 Learning Processes

2.2.1 Learning Approaches

Research into how students learn and which factors bring about success have increased in the past few decades. One of these factors is the learning approaches. The majority of literature on learning approaches, which started in the 1970's have been derived from studies on university students in developed countries in Europe, Australia and the United States (Watkins & Regmi, 1990), as well as in Hong Kong. Meanwhile, developing countries around the world are also trying to improve their quality of higher education (Watkins & Regmi, 1990) and some are looking into benchmarking/accreditation with British, European and American educational bodies, and are also interested in the factors bringing about academic success. Therefore, it is important to look into how students approach their learning in developing countries which have different cultural attributes (Akande, 2004). Turkey is one such country. Almost no research on learning approaches in this country were published until turn of the century (Berberoğlu & Hei, 2003; Selçuk, Çalışkan, & Erol, 2007).

Although having good study habits has been shown by research to have a positive effect on academic success, which is measured by the quality as well as the quantity of effort (Glover, 1966), the actual approach the student has towards learning and what they actually do during the hours of study is also a very important factor in this equation (Entwistle et al., 1974).

Problems relating to the way students study seem to always have been a concern with researchers. They have tried to pin these down to inappropriate attitude, values, motivation and study skills (Finger & Schlesser, 1965; Xavier, 1955) but somehow this was not enough. It was not until the seventies when a breakthrough came with Marton and Saljö when they got their students to read passages and answer questions so they could try and find out how students approach learning, that they discovered that the type of activity students engage in to study academic material to be, what they called, 'deep level processing' and surface level processing' later labeled as 'deep' and 'surface' approaches to learning. The 'deep' approach to learning implies that students try to understand and make sense of the basic principles and ideas in the academic material, and the 'surface' approach implies that the student just memorizes the words in the passage as in rote learning (Marton & Saljö, 1976). Eight years later Marton and Saljö added the 'intent' factor to their approaches stating that when using any one of the approaches, what is important is the intent on either understanding the material as in the deep approach, or the intent on memorizing the material as in the surface approach (Kember, 1996).

In 1983, Entwistle and Ramsden came up with the strategic approach and in 1987, Biggs produced a very similar model called the achieving approach, both adding the 'intent' factor in 1987. The strategic or achievement approach refers to the student approaching learning with the intent on getting good grades. In this approach the student has the motive to make strategic plans to achieve this end (Entwistle & Ramsden, 1983). To summarize, Richardson (1994), adapting Entwistle's explanation, defined the features of the three approaches to learning as follows:

Deep Approach

- *Intention to understand*

- *Vigorous interaction with content*

- *Relate new ideas to previous knowledge*

- *Relate concepts to everyday experience*

- *Relate evidence to conclusions*

- *Examine the logic of the argument*

Surface Approach

- *Intention to complete task requirements*

- *Memorise information needed for assessments*

- *Failure to distinguish principles from examples*

- *Treat task as an external imposition, focus on discrete elements without integration*

- *Unreflectiveness about purpose or strategies*

Strategic Approach

- *Intention to obtain highest possible grades*

- *Organize time and distribute effort to greatest effect*

- *Ensure conditions and materials for studying appropriately*

- *Use previous exam papers to predict questions*

- *Be alert to cues about marking schemes* (Richardson, 1994, p. 1)

2.2.1.1   Learning Approaches and Academic Achievement

Some studies looking into success and the type of learning approaches used by students, showed students to be equally successful whether they used the deep, meaningful approach or the surface, rote learning approach (Biggs, 1976). As more research was carried out, however, it became "clear that students' approaches are linked to academic success" (Ramsden, 1983, p. 695) in that the deep approach, also known as the meaning orientation, and the strategic, also known as the achieving orientation, result in better performance and academic success whereas the surface approach, rote or reproducing orientation results in lesser academic achievement (Ramsden, 1983; Purdie & Hattie, 1995). In fact Wigen, Holen, and Ellingsen in their study of Norwegien medical students studying in the University of Science and Technology, found the meaning approach to be the "most positive single factor" predicting academic success (Wigen et al., 2003, p. 35). Other studies found the deep approach to be directly related to success (Ramsden, 1983; Cano, 2007; Reid et al., 2007) or found it to at least produce good results provided that the student studies hard and long enough (Kember et al., 1995).

In some studies, however, while the surface approach was found to negatively predict academic success (Burton & Nelson, 2006), some research did not find the deep approach to predict academic achievement (Burton & Nelson, 2006; Cassidy & Eachus, 2000; Diseth & Martinsen, 2003; Rollnick et al., 2008).

Biggs (1978) criticized studies conducted on student study processes forecasting academic achievement for using one independent variable, namely study methods. He proposed the General Model of Study Processes which incorporates the Presage, Process and Product elements. Presage divides into two sections 1) Personal which incorporates prior knowledge, abilities, personality and home background and 2) Situational which includes subject area, teaching method, time on task and task demands. All these elements are possible direct predictors of academic performance and/or the Process factors (Biggs, 1978 p. 267). (See Figure 1, p. 5). Therefore, based on Biggs' (1978) criticism on research conducted using only one independent variable, studies on learning approaches resulting in the deep approach not predicting academic success could be the result of not taking into consideration the effort factor. Kember et al. (1995) stresses the importance of the required amount of effort being exerted in order for the learning approaches to provide a positive effect on academic success.

2.2.1.2 Learning Approaches and Fields of Study

Conflicting results have been reached in various studies concerning the use of different learning approaches between fields of study. The study of Canadian students' learning approaches showed no difference in success of students using either approach between the Art subjects or the Science subjects (Biggs, 1976).

Laird et al., (2005) study on the use of the deep approach across different disciplines of study found that students used the deep approach more in the arts, humanities and social science fields, less in the engineering and physical science subjects, and between the two in the educational sciences subjects.

2.2.1.3 Learning Approaches and Parent Education Levels

Studies on the effect of mothers' and fathers' education levels on the use of the learning approaches have shown that the higher the fathers' education level, the more likely the student will use the deep approach (Biggs, 1985) and in some cases the higher both parents' education levels the higher the tendency for the student to use the deep approach to learning (Cano, 2007).

2.2.1.4 Learning Approaches and the Educational Environment

Further studies into these approaches uncovered that students study according to how they perceive they will be asked questions on the material and that the actual teaching method determines the approach the student will embark on (Marton & Saljo, 1976; Ramsden & Entwistle, 1981; Ramsden, 1989; Butler & Cartier, 2004). For example, students will use the deep approach if they find that the topics of study interesting and they perceive it to be of use to them personally and also when they realise that a higher level of cognitive learning is required in higher education; students will use the surface approach if they are overloaded and if assignments and exams require them to regurgitate the material; and they use the strategic approach on receiving information on how they will be assessed and what is required of them to pass (Richardson, 1994). A study on 2,208 students in British universities and polytechnics in diverse academic fields and subsequent studies on university first year students taking Electrical Engineering courses showed that students of teachers who allowed freedom in learning and were pereceived to use 'good teaching methods' were orientated towards the meaning approach to learning and faculty who overloaded their students with academic activities and inhibited freedom in learning attracted the reproductive orientation towards studying in their students (Ramsden & Entwistle, 1981; Ramsden, 1989;

Entwistle & Tait, 1990). An unexpected discovery, found contrary to the hypothesis that university students would be more probable to use the deep approach, was that students in the polytechnics (whose high school grades were found to be much lower than those attending universities) would be weaker in their studies and would adopt a more surface approach to studying. In fact, in this sample, it was found that the polytechnic students showed a "more likely" orientation towards using the meaning approach to studying (Ramsden, 1983, p. 702).

2.2.1.5 Research on the Approaches between the 1970 – 1980's

Starting from towards the end of the seventies right through into the eighties there was a surge to design, test and report on inventories and questionnaires that were created to test out these newly found and named learning approaches, to maybe find other approaches or subdivide the existing ones and/or add variables to the equations all in vain to find the recepie for academic success (Biggs, 1976; Entwistle, Hanley & Hounsell, 1979; Entwistle, Hanley, & Ratclife, 1979; Biggs, 1985; Entwistle & Waterston, 1988; Speth & Brown, 1988).

2.2.1.6 Research on the Approaches in the 1990's

The topic concerning students adopting a learning approach based on the perception of the teaching approach used by their teachers was revived in the 1990's. It was found that learning approaches used by the students changed according to the learning context (Eley, 1992; Richardson, 1994; Vermetten et al., 1997). The perceived 'good teaching', which was more likely to result in the deeper approach to learning, was defined "as supportive of student learning, as having clearly defined goals and structure, as explicitly focussing on the mental processing in learning, as emphasizing a capacity for independent learning, and as providing support for modes of learning and study typical

of higher education" (Eley, 1992 p. 250) or as adjusting the material and the pace to be presented, so it was suitable for the level of the students, making sure it was clear and in a logical order, readily explaining in such a way to ensure understanding and having enthusiasm towards their teaching and empathy towards their students (Entwistle & Tait, 1990).   So, if teachers especially focus on the mental processes in learning when designing their teaching methods, literature shows that this will induce the use of deep study approaches in the student (Eley, 1992; Speth & Brown, 1988). On the other hand, Haggis argues that if a student hasn't or doesn't use the deep approach, it may be difficult to get them to use it "if it is not 'already there" (Haggis, 2003. P. 94).

Meyer and Müller (1990), in their attempt to make clearer the associations between perceptions of the learning context and approaches to studying, discovered that these perceived contexts were stronger for the deep approach, and that there are "important linkages between learning context, the approach taken, and learning outcome" (Meyer & Muller, 1990, p. 149). So, according to the literature, teachers can change their students' approach to learning by changing their teaching methods (Eley, 1992) or even more importantly by just changing the students' perceptions to their course (Parsons & Meyer, 1990) as only changing the environment does not always mean that it will change the perception of how the "student sees the world" (Haggis, 2003   p. 93). Research conducted 15 years later however, showed that students use the surface approach according to how they perceive the learning environment but the use of the deep and strategic approach is more based on the personality of the students (Diseth, Pallesen, Hovland, & Larsen, 2006).

2.2.1.7   Research in the 1990's - Cultural Differences

The nineties also gave birth to an interesting anomaly in this line of research. So far the majority of the literature on learning approaches have been derived from the studies on university students in western countries mainly the United Kingdom, Australia, America and Scandinavia. In addition to these, Entwistle & Ramsden's Approaches to Studying Inventory (ASI) and the Course Perceptions Questionnaire (CPQ) was used in a study of 1,194 English speaking students in South Africa but this population was considered to be similar in character to the inventory designer's population (Meyer & Parsons, 1989). Kember and Gow, broke this trend and administered Biggs' Study Process Questionnaire (SPQ) to 1,043 university students in Hong Kong (Kember & Gow, 1990). On stepping out of the boundaries of the western world and administering a western inventory to Asian students, an interesting discovery was made. The deep approach or meaning orientation was found to correspond with previous western studies, the mean achieving approach scores have been found to be constantly higher than Australian and British students (Kember et al., 1995) and the surface approach or reproducing orientation did not appear, only a new approach, labelled "narrow approach" which referred to students working step by step through each section of the material, first understanding what it entailed followed by then memorizing it and going onto the next section in the same way (Kember & Gow, 1990; Kember,1996; Kember, 2000) was discovered. Kember postulates that the reasons for this could be that these usually high achieving Asian students' medium of instruction is not in their mother tongue and so they need to go over and over the passage in order to reach an understanding of it and then memorize it. To a westerner it may seem like memorization but the Asian student sets out with the intention to understand, in which case, s/he

cannot be put into the categorization of a surface approach learner. A second reason put forward is due to cultural traditions that depict diligent study (Kember, 1996). The Chinese society values and respects education and scholars to an extent that is not seen in other societies. So much so that the Chinese and other Asian societies are eager to help family members financially to reach their educational goals which in return results in students working hard at their studies to show their appreciation for this support (Kember, 2000). It is interesting to note here that the cultural aspects are not being taken into consideration within these approaches and so any anomalies discovered along the way with non-western countries are being undertoned while at the same time trying to squash the findings into the models of the west regardless of the "lack of 'fit' between the model and these different cultural contexts" (Haggis, 2003, p. 93).

2.2.1.8 Research on the Approaches at the Turn of the Century – Critique

Until the turn of the century the main form of criticism was on the different types of instruments and the methodologies used. There was a lot of discussion on whether qualitative, quantitative or the use of both would be better and on the way the qualitative methods were administered and how sound they really were. Richardson summarizes the stages through which both the qualitative and the quantitative research methods journeyed through, starting from the seventies and into the early 90's, spelling out the main loopholes of both methods and taking the reader through the tests and trials and remedial of some of the more popular inventories (Richardson, 1994).

As mentioned in section 2.2.1.5 extensive studies were conducted on the learning approaches between the 1970 – 1980's. A lot of conflicting results were found from these studies. For example some researchers found only the deep approach and strategic

approach to be significant factors of success (Ramsden, 1983; Wigen et al., 2003) whereas others found all the approaches to be significant factors of success (Biggs, 1976; Biggs, 1978; Haggis, 2003). Reasons volunteered or criticisms made on the conflicting results that kept appearing in research results done on the approaches, were that the methodologies, instruments and questionnaires used, were asking students to self-report what they do instead of measuring their actual behavior (Vermetten et al., 1997; Haggis, 2003; Richardson, 2004; Cruce, Wolniak, Seifert, & Pascarella, 2006; Heikkila & Lonka, 2006). On the subject of inventories and questionnaires, it is important to also note that the actual words used in them can have different connotations for different people, especially with the diverse populations that universities now have. Researchers are pointing out that the meaning of the word 'meaning' may mean one thing for the teacher and something else for the student as can the meaning of the word 'understanding' (Haggis, 2003; Richardson, 2004). Apart from the meanings of the words, another problem lies with, and has been criticized, and that is actually being able to measure how and whether understanding has occured (Haggis, 2003). One more factor regarding the inventories and questionnaires, is that when we remember on what basis the original deep and surface approach model was created - by asking students to read a text and answer questions, we can see from later inventories and questionnaires that many different tasks are questioned i.e. the model has been broadened to include more tasks and so when trying to use the results obtained when teaching, it doesn't always prove to be supportive and any such characteristics or factors found in the research which doesn't fit into the model can "become invisible" (Haggis, 2003 p. 95).

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At the turn of the century Haggis criticized the fact that no critique had been made of the deep and surface approaches itself, which he called the "conception (of learning/knowledge), approach (towards learning), perception (of learning environment)" and outcome (of learning) model (Haggis, 2003, p. 90) and began criticizing by stating that all literature seems to reproduce, imitate or stretch out the basic ideas and that the research on this model seems to be mainly quantitative that tries to reinforce this theory (Haggis, 2003). He asserts that researchers studying these approaches make certain assumptions such as thinking that "students want to (or can be made to want to) relate personally and meaningfully to their subjects" (p. 97) and that they know and understand the goals of their university and relevant program, that the students who come to university are already at a level that the teacher expects them to be at (a level that can cope with the academic work involved), and that they have the "confidence and skills" (p. 97) to be able to cope with what is expected of them (Haggis, 2003). Haggis states that the system in place seems to be one that is suitable for a certain elite and not for the majority of students and that the values within the model is being forced upon the students. He says that the model has been designed according to goals of faculty and not the goals of students and and when the faculty-student goals do not match, surveys are designed and implemented "to find out 'what is wrong' with students who" (p. 98) don't use the deep approach to learning (Haggis, 2003). So, Haggis actually questions the use of the deep approach that seems to be taken for granted that it is the 'best' approach for all to take in higher education and assumes that all students should know how to, or it is thought that they should be able to use this approach on entering higher education, but in reality, it has been seen from research results, that very few students actually have the cognitive skills and self-regulation skills necessary at this

level when they arrive at university (Eikland & Manger, 1992; Haggis, 2003). So, the whole matter is not about being concerned with what problems the students are facing in reaching these goals or expectations of faculty, as, even if teachers are concerned with these skills that an important number of students are lacking, they don't see it as their job to remedy student's study skills (Tait & Entwistle, 1996). In any case, to be a student that fits teacher expectations will take time, a lot of effort and patience with all concerned. Haggis asks would it not be better if a lot more students could achieve academic goals in some way without "compromising the overal aims of higher level learning" (Haggis, 2003, p. 99).

Another factor related to the insistance on the use of the deep approach is the fact that research has shown that it is difficult to change from one approach to another but that researchers are still adamant to make the students change to the use of the deep approach to learning regardless of the fact that the surface approach can lead to successful learning and they are prescribing this change to occur via the teachers changing their methods of teaching and assessment (Haggis, 2003). In any case, research on this topic has found that changing the environment will not necessarily change how the student perceives the environment as this is what has been found to be a determinant factor for getting the student to change his/her approach (Parsons & Meyer, 1990), if at all possible.

As mentioned before, in section 2.2.1.7 'Research in the 1990's – Cultural differences', Haggis criticizes the fact that the cultural aspects of the students have not been taken

into consideration in that any differences in factors that have been discovered in research results has been tried to be squeezed into the model (Haggis, 2003).

2.2.1.9 American Nationwide Studies on the Learning Approaches

The National Survey for Student Engagement started administering surveys nationwide, to university students, with the philisophy, that the basis of success, lies with how engaged the student is academically and how the academic institutions are faring in enabling this. These philosophies lie more in line with Astin's theory of Involvement (Astin, 1984) and Chickering & Gamsons' 'Seven Principles for Good Practice in Undergraduate Education (Chickering & Gamson, 1987) in which both incorporate study habits and learning approaches. The learning approaches referred to in their fifth survey, 'Pathways to Collegiate Success' 2004 Annual Survey, which gathered data from over 160,000 first and second year university students from over 470 academic institutions with the aim of taking a snapshot picture of academic practices and student results, stresses how they were 'pleasantly surprised' to find in their earlier NSSE surveys, that students were being engaged in their learning actively rather than being just passive listeners and that they had designed a survey to measure the types and extent to which the students used these active learning approaches which they named 'deep learning' (NSSE, 2004). The subdivisions of this deep learning was 'high order learning' where students needed to use higher cognitive skills where they analyze, synthesize, assess and apply new information, 'integrative learning' where students integrate their newly acquired knowledge or skills to previous knowledge to enhance learning, and 'reflective learning' which entails going back on what they have learned and experienced to deepen understanding (NSSE, 2004). The results were pleasing in that 75% of first years and 87% of seniors reported that they 'very often/often' worked

on papers that required integrating ideas/information from other sources" (NSSE, 2004 p.14). A similar organization, the Community College Survey for Student Engagement, administered a survey on the very same lines and on asking the same question found that 59% of students answering that they did so 'often or very often' and 50% 'often or very often' prepared at least 2 drafts of their assignment before handing it in (CCSSE, 2006). They asked the students to what extent they were required to do any of the cognitive learning activities depicted by the 'higher order learning'. In answer to this, the students reported that sixty four percent of the time they were required to do rote learning, 65% of the time they were required to do analyzing, 57% of the time to do synthesizing, 49% of the time they were required to make judgements, 53% of the time applying and 57% of the time they were required to use the information they had learned (CCSSE, 2006).

2.2.1.10 Learning Approaches Inventories/Questionnaires used in the Literature

Initial studies on how students approach learning was done using qualitative methods involving interviewing students and the results obtained initiated quantitative research and the creation of inventories (Richardson, 2004). Different groups of researchers over the world started creating such inventories for example in 1970 by Entwistle and Entwistle in the United Kingdom and Biggs in Australia, followed by Marton & Saljo in Sweden in 1976 (Entwistle & McCune, 2004). The following are some of the more frequently mentioned inventories referred to in the literature:

- In 1979: Approaches to Studying Questionnaire (ASQ) designed by "Entwistle and his colleagues (Entwistle et al., 1979; Ramsden & Entwistle, 1981)" (Richardson, 1990, p. 155). This questionnaire was divided into the following subscales: Meaning

orientation, Reproducing orientation, Achieving orientation, and Styles and pathologies (Richardson, 1990).

- In 1981: Course Perceptions Questionnaire (CPQ) designed by Ramsden and Entwistle (Kember et al., 1995).

- In 1983: Approaches to Studying Inventory (ASI) designed by Entwistle and Ramsden (Meyer & Parsons, 1989; Entwistle & McCune, 2004). Containing "three main factors that brought together three distinctive sets of intentions, motives, and processes of learnng and studying." (Entwistle & McCune, 2004, p. 329). Revised by Entwistle et al. in 2000 (Richardson, 2004) and later developed into ASSIST (Entwistle & McCune, 2004).

- In 1987: Study Process Questionnaire (SPQ) designed by Biggs (Kember et al. 1995; Entwistle & McCune, 2004). This questionnaire contains three scales: surface, deep and achieving approaches, further subdivided into motives and substrategies (Entwistle & McCune, 2004) and further improved to the two-factor SPQ in 2001 by Biggs et al. (Biggs et al., 2001; Richardson, 2004).

- In 1988: Qualitative Context Inventory (QCI) designed by Meyer (Cliff, 1995).

- In 1991: Motivation Strategies for Learning Questionnaire (MSLQ) designed by Garcia & Pintrich (McKenzie et al., 2004; Entwistle & McCune, 2004). This questionnaire includes 3 motivational sections: Expectancy (Self-efficacy, control

beliefs), Value (intrinsic & extrinsic goal orientation and task value), and Affect (test anxiety) (Entwistle & McCune, 2004) and five subscales of Learning Strategies Scale: Cognitive Learning Scale (Elaboration, organization); Metacognitive Self-regulation scale (Goal setting, etc.); Time management, and Effort Regulation Scales (gratification delay and persistence) (McKenzie et al., 2004).

- In 1998: Inventory of Learning Styles (ILS) designed by Vermunt (Entwistle & McCune, 2004). This inventory has four sections: "Self-regulation...with deep and concrete processing" (p. 337); Surface processing with external regulation and certificate oriented motive; dependence "on stimulating education and cooperative learning to an ambivalent orientation and lack of regulation" (p. 337); and "use of knowledge and a vocational orientation" (Entwistle & McCune, 2004, p. 337).

- In 2002, Approaches to Learning and Studying Inventory (ALSI) designed by Entwistle, McCune and Hounsel. This inventory has five scales: Deep Approach, monitoring studying, surface, organized studying and effort management (Entwistle & McCune, 2004).

- In 2002, Learning and Study Questionnaire (LSQ) designed by Entwistle, McCune, and Hounsel of which ALSI is a part of (Entwistle & McCune, 2004).

- In 2002, Experiences of Teaching and Learning Questionnaire (ETLQ) Entwistle, McCune, and Hounsel of which ALSI is a part of (Entwistle & McCune, 2004).

- In 2001: Revised Two-Factor Study Process Questionnaire (Biggs et al., 2001).

Research on the weaknesses of the inventories and questionnaires shows problems concerning internal consistency and validity of constructs: This is mainly due to the higher educational environment not being taken into consideration. For example the highly international climate of universities means that there are many culturally and linguistically diverse groups attending any one institution at one time. Therefore the meanings of words originally used in inventories and questionnaires until now, may not be understood as intended. This can result in not taking obtaining accurate results (Richardson, 2000). Entwistle and McCune (2004) state the importance of taking into consideration the teaching aspect when designing inventories as these two factors go hand-in-hand and greatly influence the approach to studying and learning.

2.2.1.11 Studies on Learning Approaches Conducted in Turkey

At the turn of the century published research on the learning approaches in Turkey includes studies conducted by Ellez and Sezgin (2002) which looked at student teachers' learning approaches and with Berberoğlu and Hei (2003) who compared the learning approaches of university students studying in Turkey and Taiwan. As from 2007 the number of studies published on this topic slowly increased. For their research some designed and used their own learning approaches inventory (Ellez & Sezgin, 2002; Selçuk et al., 2007) some used Ellez and Sezgin's (2002) inventory (Koçak & Yücel, 2009), some translated the Approaches to Studying Inventory (ASI) which was developed by Ramsden and Entwistle (1981) (Berberoğlu & Hei, 2003; Senemoğlu, 2011), some translated the Two Factor Revised Study Process Questionnaire (R-SPQ-2F) developed by Biggs et al., (2001) (Önder, Beşoluk & Demirhan, 2009), others

translated the Learning and Study Approaches Inventory developed by Hounsell, Entwistle, Anderson et. al., (2002) (Topkaya et al., 2011). The studies looking into the use of the deep approach as per year of study, unanimously found the use of the deep approach to increase with each year of study (Ellez & Sezgin, 2002; Koçak & Yücel, 2009; Selçuk et al., 2007; Senemoğlu, 2011). Studies researching whether the deep approach predicts success, found mixed results. Studies conducted by Ellez and Sezgin (2002) and Selçuk (2010) on a sample of 251 university students studying Mathematics Teaching and a sample of 25 students studying in the Middle School Sciences and Sciences Field Education program both in the Dokuz Eylül University found the use of the deep approach to significantly predict academic achievement alongside a study conducted on 203 university students studying in the Pre-service Science Teacher program in Sakarya University where it was found that the use of the deep approach was highly correlated with academic success (Önder et al., 2009). The study conducted on 630 students studying in the faculties of Education, Arts and Sciences, Communication, Engineering, and Agriculture in the University of Ege found that neither the deep approach nor the surface approach significantly predicted academic achievement (Topkaya et al., 2011).

2.2.1.12 Learning Approaches and Self-Efficacy

Research on the effect of self-efficacy on learning approaches discovered that students with high academic self-efficacy led to the use of the deep approach, and students with low academic self-efficacy led to the use of the surface approach (Cassidy & Eachus, 2000; Habel & Habel, 2010; Papinczak et al., 2008; Prat-Sala & Redford, 2010; Topkaya et al., 2011).

2.2.1.13 Learning Approaches and Locus of Control

Research on the effect of locus of control on learning approaches discovered that students with high internal locus of control led to the use of the deep approach, and students with external locus of control led to the use of the surface approach (Cassidy & Eachus, 2000).

2.2.2 Study Behavior

Year by year, as the number of people who enroll for further education increases, it brings with it an increased number of problems such as retention and failures to meet the mark and is especially poignant in the first year of university (Tait & Entwistle, 1996). It seems that study habits of students have been a problem even before the great universtity boom. In the early 1950's in the USA there was a popular notion that there was no difference in the success of the life of students who studied and of those who did not (Xavier, 1955). This is not the case now. It is well known that there are good study habits and bad study habits. That is, ones that bring success and those that do not. What are study habits? Nneji defines it as "learning tendencies that enable students to work privately" (Nneji, 2002, p. 491) but studying does not always happen privately so maybe another way to define study habits could be 'behaviours related to academic practice that have, through time and continuous regular practise, become inate actions that students follow in the hope that it will bring them success'.

These habits are slowly formed on the onset of starting infant school and gradually become a part of human nature whether it means studying regularly on a daily or weekly basis or studying 'regularly' on a 'just-before-the-exam' basis, studying by oneself or with a friend, studying with background music or in a quiet atmosphere. Many parties

are involved in the creation of study habits such as the individual him or herself, his or her parents, their teachers, peers and the environment.

According to Michaels and Miethe (1989), the criteria that ascertain 'good' study habits include the writing up of notes taken in class, studying without the television or radio on, studying at regular intervals and not cramming just before exams, having a routine such as setting certain times each day for study, and choosing an appropriate place to study.

Other studies on successful students have shown their study habits to include reading the required material before class, taking notes during the lecture and asking for help when they need it from their instructors (Strage et al., 2002) as well as studying in a noise free environment (Michaels & Miethe, 1989).

The East Carolina University, in their 'Time Use Survey', reported that 57% of their students 'never' studied while watching television and 47% 'never' listened to the radio while studying (East Carolina University, 1988).

The results of the nationwide study of university students in the USA on 'Study Habits, Use of Text Books and Key Factors in Student Success', commissioned by the Association of American Publishers, show female students to be more studious than their male counterparts. They found female students to generally study more, be 35% more likely to study daily, 23% more likely to read their textbooks thoroughly and be more likely to earn more 'A's than males. Amongst the 1,800 second and fourth year university students who took part in this study, 41% were found to study daily,

(studying daily showed that these students were 40% more likely to earn an 'A'), and 18% were found to study once or twice a week. Results also showed that students who studied 15 hours or more per week were 43% more likely to earn an 'A' especially if they read their textbooks thoroughly (Hildebrand, 2005).

Research done on four state universities in Nigeria on second and fourth year students showed that 65% read during the week, 35% read at the weekend, 60% read at night, whereas 32% read early in the morning and 8% read during their free time and that 45% read in the classroom, 37% in their rooms, 15% in the library and 3% on the bus (Nneji, 2002).

2.2.2.1 Study Behavior and Academic Achievement

On reviewing the literature it was found that underachievers or students receiving low grades were found to have poor study skills (Eikland & Manger, 1992; Entwistle et al., 1989; Kachgal Hansen, & Nutter, 2001; Lau & Chan, 2001) but good study habits were highly significant factors determining student success (Al-Hilawani & Sartawi, 1997; Crede & Kuncel, 2008; NCES, 1997; Need & De Jong, 2001; Rita, 1996), especially the component of reading the text (Lineweber & Vacha, 1985) and "studying without background noise" (Michaels & Miethe, 1989, p. 314). Crede and Kuncel's (2008) meta-analysis (N=72,431) on study behavior researches published between 1872 and 2005 seem to prove the point that study skills predicted academic success.

2.2.2.2 Study Behavior Inventories

The term study behavior is used interchangeably with the term study habits in the literature. Whilst reporting, the terminology employed in the literature that is being referred to will be used.

Initial known studies on study habits began with Wren in 1941 with his Study Habit Inventory (SHI) which attempted to measure general study attitudes and behaviors, reading and notetaking techniques, and strategies for studying for exams (Howard, 1993).

This was followed by the design of the 'Scale of Study Habits and Attitudes Form C (SSHA) by Brown and Holtzman in 1966 (Rita, 1996) who was cited to have created "one of the first in this field" in 1966 (Entwistle & McCune, 2004, p. 327). This inventory measures: delay avoidance, work methods, teacher approval, education acceptance and study orientation (Rita, 1996).

Ensuing this, the Study Behavior Inventory (SBI) was designed by Brown, Müller and Gibson in 1982 (Howard, 1993). They used items on Wren's (1941) Study Habits Inventory and some items from Brown and Holtzmans (1966) Study Habits and Attitudes Form C and proceeded to develop the Study Behavior Inventory Form B. After further administrations of the inventory, revisions, fine tuning and with the addition of anxiety and coping behavior factors, Form C was formed (Bliss & Vinay, 2004; Bliss & Mueller, 1986).

In 1986 Bliss, Mueller and Richard formed The Study Behavior Inventory Form D (SBI). They stated that it seemed to be a valid and reliable instrument suitable for students in college and university (Bliss & Mueller, 1986). This instrument has been used in over 300 higher educational institutions in the USA and English speaking countries having been initially tested on 1,052 and later 5,000 university students

yielding similar "high levels of test-retest reliability" (Bliss & Vinay, 2004, p. 28) results. The factor analysis produced three factors 1) "dealt with feelings of security, self-esteem and competitiveness" regarding academic tasks (Bliss & Vinay, 2004, p. 28), 2) "behavior related to routine, repated academic tasks such as doing assinments and preparing for classes" (Bliss & Vinay, 2004, p. 28), and 3) "involving more long range planning such as studying for an examination or preparing papers and other long-term projects" (Bliss & Vinay, 2004, p. 28). The internal consistency reliability estimates for the whole instrument and items in each of the 3 factors ranged from .70 to .88 (Bliss & Vinay, 2004).

Bliss and Mueller differentiated between the two terms behaviors and habits, using the word behaviors instead of habits saying that skills are know-how, ability and how capable the student is when studying and behaviors are what they actually do when studying (Bliss & Vinay, 2004). So although study skills are essential for success if a student doesn't use this habitually, then without the habit it won't be of much use. Therefore, instruments that have been designed to measure study habits, have the element of study skills within them.

The Study Behavior Inventory (Bliss & Mueller, 1986) was later translated into Spanish (Bliss and Vinay, 2004) and when used in studies with undergraduate Spanish students in the USA found that a high SBI score led to higher academic achievement (Bliss & Sandiford, 2003; Bliss & Vinay, 2004).

2.2.2.3 Turkish Literature on Study Behavior

Turkish research on study behavior, which is interchangably referred to as 'study strategies' and 'study habits' seem to begin in the early 1980's and has been a constant subject of interest (Erdamar, 2011). Although study behavior research conducted by Turkish researchers include study habits of primary, middle and lycee students, it seems there is a special interest in the study behaviors of students studying in the Faculty of Education that is students who are studying to be teachers. While some studied what type of study behavior they had and to what extent they were used (Bay, Tuğluk & Gençdoğan, 2005; Özer, 1993), others looked at the effects of study behaviors on academic achievement (Saracaloğlu, Başer, Yavuz & Narlı, 2004; Tok, 2008; Vergili & Atılgan, 1998). While some studies found the effect of good study behavior to have a positive effect on academic achievement (Tok, 2008; Vergili & Atılgan, 1998), other studies found students to have mediocre study habits which has room for improvement (Özer, 1993; Erdamar, 2011).

2.2.3 Time on Task – Effort

How students study and what they actually do in their hours of study is, of course, a very important factor leading to the success of a student. The number of hours actually put into these tasks, however, is also an important element. The literature reviewed reveals the expectations of faculty and the reality of student input.

2.2.3.1 Expectation of Professors for Student Study Per Week

Although teacher expectations of students regarding the number of hours they would like them to study varies, one point is consistent and that is that teacher expectation does not meet with reality. In fact, the NSSE study found teacher expectations to be very different to reality, the teachers responding in this survey reported that they expected

their students to study 25 hours per week (NSSE, 2004) whereas the students were reported to study not quite as much. The professors declare that students read much less than they did 30 years ago and that their expectation is for students to read 150 pages per week (NSSE, 2004).

Taking a look at Chinese teachers' expectations, it can be seen that this is 52 hours per week but this includes class contact. So, even if 20 hours of estimated class time is deducted, it would leave 32 hours per week of private study that the professors expect from their students (Kember et al., 1995).

2.2.3.2 Students' Weekly Study Hours

On scanning the literature, it was seen that the number of hours studied per week only changes about one or two hours on average between the year attended at university (East Carolina University, 1988; NSSE, 2004).

The literature review on students' study hours per week have been categorized into five group according to the highest percentages as follows:

2.2.3.2.1 Between 26 – 40 Hours Per Week

In a study of a sample of 613 students using the log method, Leeds Metropolitan University reported that on average students spent 38.8 hours per week on study related activities off campus, the actual number of hours varying according to course, gender and year (Innis & Shaw, 1997). Seven universities in Hong Kong using the diary method on a sample of 266 students found that the average independent study time outside classroom study to be 26 hours per week (Sivan, 2003).

2.2.3.2.2 Between 21 – 25 Hours Per Week

Mechanical Engineering students in a Hong Kong university stated their actual study time was 43.8 hours per week which included class time (Kember et al., 1995). So assuming class time would be around 20 hours per week this would leave an average of 23.8 hours per week which fits into this category.

2.2.3.2.3 Between 16 – 20 Hours Per Week

The workloads of 626 students studying in all years at Monash University were investigated. It was reported that students in all years were spending around 20 hours per week on assignments (Clift & Thomas, 1973). At this time questions were being asked as to whether students were being occupied for too long without leaving them time to read (Clift & Thomas, 1973). Four thousand two hundred and ten students at community colleges were surveyed in the USA and 75% were repored to study 20 hours per week or less studying and preparing for class they stated that they had job pressures and family responsibilities (Glover, 1996). So if they did not have these pressures and responsibilities could that mean that they would study more? The University of Colarado, on implementing a questionnaire to 651 students, found their average studying time to be 16 hours per week (University of Colarado, 1999).

2.2.3.2.4 Between 11 – 15 Hours Per Week

The East Carolina University using a time use survey reported that their students on average studied for 13 hours per week but specifically 22% reporting that they study between 11 – 15 hours per week (East Carolina University, 1988). Fifty percent of second and fourth year students at four state universtities in Nigeria reported that they read between two – four hours per day which would be between 14 – 28 hours per week (Nneji, 2002). The National Survey of Student Engagement Report 'Student

Engagement: Pathways to Collegiate Success', which was based on a sample of 160,000 first and senior year university students from more that 470 institutions, found on average first year students to study 13 hours per week and the senior students to study 14 hours per week (NSSE, 2004). The University of Minesota, in a study sample of 141 students consisting of 58.16% freshmen, 19.15% sophomores, 13.48% juniors and 5.67% seniors who had an average of 2.72 Grade Point Average (GPA), stated their average study time to be 12.52 hours per week (Kachgal et al., 2001). Student Monitor on surveying a sample of 1,800 2nd year and 4th year university students, reported that on average students study for 14 hours per week (Hildebrand, 2005).

2.2.3.2.5 Between 0 – 10 Hours Per Week

Fifty one percent of students at the East Carolina University reported that they studied between 0 and 10 hours per week (East Carolina University, 1988). In UCLA it was found that 53% of the students study between 0 – 10 hours per week (SAIRO, 2002). The National Survey of Student Engagement Report 'Student Engagement: Pathways to Collegiate Success' reported 44% of the 160,000 first and senior year university students from more that 470 institutions to study for 10 hours or less per week (NSSE, 2004). In the University of Minesota 84% of students reported that they were studying between 0 - 10 hours per week in the fall semester and 51% of students studying up to this amount in the spring semester of 2003 (ADT, 2005). Three private universities in Pensylvania administered a survey on students taking Macroeconomics courses. It was found that these students on average study 5.4 hours per week study (Krohn & O'Connor, 2005). In the National Survey of Student Engagement it was reported that 44% of students only study 10 hours per week and that 40% of these earn mostly 'A's and 41% of these earn mostly 'B's (NSSE, 2004). The Academy of Distinguished Teachers have raised

questions on what this means and what can be done (ADT, 2005). The Community College Survey of Student Engagement (CCSSE), which was modelled after the NSSE, administered a survey to 152 universities in 30 states to a sample of 92,000 students and found found that 68% of full-time students spend 10 hours per week or less studying (CCSSE, 2006).

It is interesting to note that in the 1960's and 70's there were concerns about student failure that could be stemming from student workloads, so much so that a Hale Report was prepared on British universities and a Passmore Report for the universities in Austrialia resulting in studies being made on workloads in the University of Monach in 1972 and 1973 where results showed that students in all years were working on their assignments on average for 20 hours per week leaving little or no time for any extra reading or further activities (Clift & Thomas, 1973) and then to find 40 years later the opposite concern of how students can spend so little time studying and still receive 'A's and 'B's (ADT, 2005). It seems there is definitely some change but further research will be able to reveal whether there lies a problem or not.

The Academy of Distinguished Teachers (ADT) suggests that further research into student workloads should be done in terms of its effect on outcomes for example grades achieved, as well as research on the expectations of teachers and students. They also suggested that studies should be conducted to find out whether faculty have changed their expectations regarding student workloads in terms of quantity, quality and also proposed looking into the difference between students of today and those 30 years ago (ADT, 2005). The ADT are not the only ones who are concerned with workloads. The

European University Association, in its plight to create a standard across universities in Europe to enable students to study in their choice European university, has already started to implement the European Credit Transfer System which has the aim of allocating credit hours to each course so that in the case of a student transferring to another university, it will be easier to count the couse credits they have already completed (Damme, 2001; Karran, 2004; Roper, 2007).

2.2.3.3 Benchmarking

It is important to get the data compiled from the literature review into perspective. Therefore in order to be able to benchmark these findings, the NSSE's list of the top 5% of institutions (approximately 24 universities in America) showing the percentages of how many hours their students study per week have been portrayed in Table 1.

Table 1. *Student weekly study hours of America's top 5% universities*

Hours/week	% of 1st years	% of seniors
0	0	0
1 – 5	6	7
6 – 10	16	17
11 – 15	20	21
16 – 20	20	19
21 – 25	17	14
26 – 30	11	11
More than 30	9	11

Figures taken from NSSE report (NSSE, 2004, p. 7)

2.2.3.4 Study Hours and Academic Achievement

Research on the hours of study and student success has shown mixed results. Some have shown that studying more hours does not lead to better grades (Entwistle et al.,1974; Eikland & Manger, 1992; Howard, 1993; Krohn & O'Connor, 2005) except in some studies where a significant positive effect was found on first and second year students

(Michaels & Miethe, 1989; Howard, 1993). A study on Norwegian students however, has shown that students with higher high school grades tend to study more during university (Eikland & Manger, 1992) but this does not show that the more they study the higher the grade they will receive. Other studies show that insufficient effort in terms of time spent on an academic task, leads to low or underachievement (Lau & Chan, 2001) and that hours spent studying is highly correlated with GPA (Nelson, 2009). A study on 264 American undergraduate students, who filled in time log on the number of hours they spent on studying for a week, found a significant effect of time spent studying together with motivation to lead to academic achievement (Nonis & Hudson, 2006).

Some interesting points were found during the time on task literature review such as students who received good scores in their midterm examinations reduced their study hours (Krohn & O'Connor, 2005), students who try to only study just before the exam, no matter how many hours they put in, they are not as successful as non-crammers (Howard, 1993), and students studying until midnight are twice as likely than those who study after midnight to earn 'A's (Hildebrand, 2005).

Although the time students spend on academic tasks does play an important role in academic achievement to some extent, the equation of the more you study equals a higher quality of work or a higher grade is not always true (Eikland & Manger, 1992; NCES, 1997). What you do during that time and how you do it is just as important.

Astin (1984) also stresses the importance of time, in that it is every student's valuable resource which needs to be used carefully and wisely. He states that it is not enough to

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just spend a certain number of hours a day writing up notes and doing the assigned homework, he postulates that the time and effort a student invests in study hours and completing tasks as well other activities such as doing extra reading, discussing what has been lectured in class with peers and faculty, will result in extended learning and development academically as well as producing a sense of satisfaction and a feeling of belonging and worth (Astin, 1984). He also points out that sometimes faculty can forget, or not realize, that time is finite and that students, like everyone else, only have 24 hours a day in which to fulfil their human needs such as eating and sleeping, and other necessities for example as attending classes, travelling, in some cases working, dealing with family requirements and socializing as well as completing assignments and doing the daily required study. Only what is left, can be used in other activities and if these are used mindfully, then the student will be able to increase their learning and personal development. This is very similar to the philosophy of thinking behind the European Universities Credit Transfer System, which is part of the Bologna Process, where expected study tasks and the number of hours thought necessary to spend on them, related to the learning outcomes, are designed. They postulate that a student has only the maximum of 900 hours to spend in a semester for the combination of all the courses they are taking and so faculty have to put their heads together to come up with an amicable credit transfer hours for each of their courses (Roper, 2007). If the students are overloaded or perceive themselves to have a heavy workload, then this can lead to the use of unwanted learning approaches such as the Surface Approach (Lizzio, Wilson & Simons, 2002; Diseth, Pallesen, Hovland & Larsen, 2006; McKenzie et al., 2004).

As seen by the literature review, time on task has many facets that need to be taken into consideration in order for it to lead to academic success.

2.3 Academic Success

There is a wide variety of research on academic success in higher education and for this reason many different definitions of this construct can be found. The basis from which these definitions stem from are the theories of what success is and how it is actualized. The Behavioristic View describes success as behaviors that are increasingly repeated due to receiving pleasing results, and the Cognitive Theory states that it is an internal phenomenon in that the individual feels the need to more frequently perform actions that meet satisfactorily with their idealistic views (Dean & Camp, 1998).

A research conducted by Dean and Camp (1998), on 1497 university students and 193 faculty members, to unearth how students and teachers themselves define success, found that teachers define success as "degree completion", "good grades" and "initial career establishment" (p.10) and students choose to define it as "overall happiness and satisfaction" (p.10). A qualitative study conducted on 66 American undergraduate students enrolled in either year 1, 2, 3 or 4 of their academic year, were asked what their definition of success was via interview. The majority of students in all academic years stated grades to be the best show of success for them at the end of the semester or year (Cuba, Swingle, Jennings, Lovett, & Lindkvist, 2012). Based on The National Survey of Student Engagement's report, the following are some of the definitions of 'What Matters to Student Success', grouped into five broad categories (NSSE, 2006):

1)   *The most commonly used measure:* enrollment into further education, grades, completing the 1st year and continuing on to the 2nd year of university, the duration of the degree and graduation (Venezia, Callan, Finney, Kirst, & Usdan, 2005; NSSE, 2006).

2) *Traditional definition*: marks gained in university entrance exams, university grades, gained credit hours throughout the semesters, satisfactorily completing postgraduate degrees i.e. masters and above, employment after graduating and salary (NSSE, 2006; Wiggers & Arnold, 2011).

3) *Difficult to measure:* to what extent the student feels he or she fits in and belongs to the university environment (NSSE, 2006).

4) *Academic proficiency and personal development:* the extent of academic development, for example, "becoming proficient in writing, speaking, critical thinking, scientific literacy, and quantitative skills" and personal development such as "self-awareness, confidence, self-worth, social competence, and sense of purpose" that will benefit both the individual and society (NSSE, 2006, p. 5).

5) *Novel definitions*: have been created out of need, mainly due to the continuously increasing diversity in the student population (NSSE, 2006).

In addition to definitions, a variety of terms are being used when referring to academic success such as 'Performance' which is acquainted with grades in the course given;

'good grades', meaning B and above; 'GPA', sometimes referring to pass and sometimes referring to a higher mark; 'Degree Attainment' and 'Achievement' (Kimball et al., 1981) all are often used interchangeably in the literature.

Of course students can be 'successful' in getting into university via entrance exams, interviews, prior high school grades or a certain number of qualifications such as GCE's or GCSE's as required in the universities in the United Kingdom, but what is important, is for the student to actually stay on and complete the degree. It can therefore be said that the students' academic success stems from student retention and satisfaction (CCSSE, 2006; NSSE, 2006) that is dependent on the extent of their involvement in university (Astin, 1984) which will bring about student learning and personal development accordingly (Astin, 1984; NSSE, 2006).

On reviewing the literature on studies concerned with academic success, it was found that many different measures were used. Orlando (2005) in his article on the "Reliability of GRE scores in predicting graduate school success.." (p. 1) stresses this predicament by giving examples of these different measures as: "first-year graduate GPAs", "final GPA", and "percentage of students to complete the program" (p. 1). Besides these measures, the use of Cumulative Grade Point Average (CGPA), and course grade were also found to be used in studies conducted on higher education academic success.

All the subheadings under the literature a review in this study are concerned with their leading to academic success depicted in any one of the measures mentioned above.

2.4 Conclusion

Teachers and students, not to mention parents and heads of academia, expect psychological research to have answers to their problems as to how best to teach so that every student can achieve maximum learning and be successful, but psychological research does not advance as fast as research does in the scientific arena. All it can do is change teacher's thoughts on the part that they play in education and highlight differences in given situations and give ideas for possible solutions, but it can never state the 'perfect' way to teach or to 'learn' (Entwistle, 1977) as there are so many diferent variables and circumstances that can change the result due to a change in any combination of variables coming together. What we do know, is that in research, the student should not be studied as an entity on its own.

The model shown in Figure 3 which was adapted from Biggs, 1978 summarizes all the factors mentioned in this literature review that has been found to lead to the success of a student in higher education. This model forms the basis of this study.

Presage   **Learning Processes**   **Outcome**

Personal

University entrance score

Gender

Age

Nationality

Mother's education level

Father's education level

Year of study

GPA

Academic self-efficacy mean

Locus of control mean

Institutional

Guidance & Psychological Counseling prog.

Turkish Lang.Teach. prog.

Pre-schl. Teach. Educ. prog.

Middle School Math Teacher Education prog.

Music Teaching prog.

Elementary School Teacher Education prog.

Soc. Sc. Teach. Educ. prog.

Sc. Teach. Educ. Prog.

Math Teach. Educ. Prog.

Turkish Lang. & Lit. Teacher Educ. Prog.

Discovery learning

Expository teaching

Eval. proc. weighted mean

Learning approaches
deep & surface approach

SBI long range mean
Long range tasks, routine tasks, acad. self-eff., & soc.

Time on task mean

Course grade

Figure 3. Hypothesized path model

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Chapter 3

METHOD

In this chapter information regarding the research design; population and sample selection methods; inventories chosen for this study, procedures for their translation into Turkish, and the procedures undertaken via pilot studies to determine the number of factors; validity and reliability analyses; data collection procedures and data analysis methods will be given.

3.1 Research Design

A survey method was conducted for this study. The data collected were analyzed by using the path analysis method "which enables one to measure the direct and indirect effects that one variable has on another"(Asher, 1983). Biggs'(1978) 'Presage-Product-Process Model was taken as a basis of the study with the intention to describe the present situation in the Faculty of Education in the Eastern Mediterranean University. The independent and dependent variables used for this study are mentioned below.

The independent variables used were personal factors (gender, age, nationality, university entrance exam score, present GPA, year of study, fathers' education level, mothers' education level, self-efficacy, and locus of control), institutional factors (program, teaching methods, and evaluation methods), and learning processes (learning approaches, study behavior and time on task). Reliability, validity and factor analyses

have been made for the instruments implemented in the study followed by correlation, and path analysis.

3.2 Population

'Population' refers to "all the objects or individuals of interest" (Groebner, Shannon, Fry, & Smith 2008, p. 1032). The population referred to in our study is all the second, third and fourth year undergraduates enrolled in the Faculty of Education at the Eastern Mediterranean University during the fall semester of the 2010-2011 academic year consisting of 1715 students. The first year students were not chosen to be part of this study due to the concern that their approach to learning and study habits may still be under the influence of their lycee education. For the population of this study, the students studying in the Faculty of Education were chosen as they will be the teachers of the future. These students' medium of instruction is in Turkish and the students are native Turkish speakers.

3.3 Sample

As can be seen from Table 2, all the second, third, and fourth year undergradutes studying in the Faculty of Education enrolled in either of the following courses during the fall semester of the $2010 - 2011$ academic year attending class on the day of administration of the inventories, formed the sample: EGIT215 Principles and Methods of Teaching (Öğretim İlke ve Yöntemleri) with 79 students (10% of the total sample), EGIT216 Scientific Research Methods (Bilimsel Araştırma Yöntemleri) with 204 students (25% of the total sample), EGIT218 Teaching Technologies and Material Design (Öğretim Teknolojileri ve Materyal Tasarımı) with 10 students (1% of the total sample), EGIT320 Special Teaching Methods II (Özel Öğretim Yöntemleri II) with 37

students (4% of the total sample), EGIT321 Class Management (Sınıf Yönetimi) with 220 students (26% of the total sample), EGIT419 Counseling (Rehberlik) with 134 (16% of the total sample), EGIT421 Education Management (Eğitim Yönetimi) 104 with students (13% of the total sample), EGIT450 Student Centered Education (Öğrenci Merkezli Eğitim) with 17 students (2% of the total sample), or RPDA313 Stages of Life and Adaptation Problems (Yaşam Dönemleri ve Uyum Problemleri) with 28 students (3% of the total sample).

Table 2. *Percentage of student participation per course*

Course Code	Name of Course	No. of Participants	Percentage of Total Sample
EGIT215	Principles & Methods of Teaching	79	10
EGIT216	Scientific Research Methods	204	25
EGIT218	Teaching Technologies & Material Design	10	1
EGIT320	Special Teaching Methods II	37	4
EGIT321	Class Management	220	26
EGIT419	Counseling	134	16
EGIT421	Education Management	104	13
EGIT450	Student Centred Education	17	2
RPDA313	Stages of Life & Adaptation Problems	28	3
TOTAL		**833**	**100**

Out of a total of 833 undergraduates who participated in the study 829 cases were found to be valid. The majority of the students 498 (60%) were female, 331 (40%) were male, 721 (87%) were Turkish from Turkey and 108 (13%) were Turkish from North Cyprus, 138 (17%) were 2nd year students, 244 (29 %) were 3rd year students, 465 (54 %) were in their final year of undergraduate study.

The majority of the students 266 (32.1%) were enrolled in the Guidance and Psychological Counseling program (A2) coded as '1', followed by 207 (25%) in the Turkish Language Teaching program (A3) coded as '2', 83 (10%) in the Pre-school

Teacher Education program (A4) coded as '3', 77 (9.3%) in the Social Sciences Teacher Education program (AE) coded as '7', 61 (7.4%) in the Middle School Math Teacher Education program (A5) coded as '4', 60 (7.2%) in the Elementary School Teacher Education program (AD) coded as '6', 28 (3.4%) in the Music Teaching program (AC) coded as '5', and 6 (.7%), 14 (1.7%), and 27 (3.3%) all coded as '8' in the Science Teacher Education program, Maths Teacher Education program and Turkish Language and Literature Teacher Education program respectively.

The students who took part in the study were between the ages of 19 and 35 with the majority 603 (72.6%) being between the ages of 20 and 23, 37 (4.6%) between the ages of 17 and 19, 162 (19.5%) between the ages of 24 and 27, 19 (2.3%) between the ages of 28 and 31, and 8 (1%) between the ages of 32 and 35.

About half, 429 (52%) of the students' present GPA ranged between 2.00 and 2.99, 267 (32%) ranged between 3.00 and 4.00, and the remaining 133 (16%) of the students' GPA ranged between 0.00 and 1.99; thus showing that the vast majority (84%) of the students participating in the study were academically sound.

About one fifth (19.5%) of the students' fathers were elementary school, 12.5% middle school, and 29.3% were high school graduates, 11% graduated from a 2-year higher educational program, 23.2% from university, 1.4% had a master's degree, .5% a Ph.D. holder, while 1.1% were illiterate and 1.4% could only read and write. Quite a number of the students' mothers (5.3%) were shown to be illiterate, 4.8% were stated to be able to read and write, the majority (30%) were elementary school graduates, 15.4% were

middle school graduates, 24.5% were High School graduates, 6.6% graduates from a 2-year higher educational program, 12.8% were university graduates, only 0.1% had a master's degree, and 0.1% was a Ph.D. holder. Two students (.2%) who left this section blank were contacted for an answer but on learning their mothers were desceased, the students were not pressed for an answer.

The students' university entrance score ranged between 61.50 – 580 where the majority 639 (77 %) received a score between 200 – 299, followed by 138 (16.5%) students obtaining a score between 300 – 399, while 14 (2 %) received a score between 400 – 499, and 6 (0.7%) between 500 – 580. Twenty-nine (3.5%) students received scores between 100 – 199 and only 3 (.3%) scored below 99.

The course grade received by the students ranged between 'F' to 'A' with only two students (.2%) failing their course, one receiving 'F' and the other 'D-'. The majority of the students 501 (60.4%) receiving between 'B-' and 'B+', 144 students (17.4%) received between 'A-' and 'A', 163 students (19.7%) received between 'C-' and 'C+', and only 19 students (2.3%) received between 'D' and 'D+'.

3.4 Instruments

The instruments used in this study will be explained in detail under a subheading allocated for each one. The instruments used under the presage section of the model depicted in Figure 2, are the Personal Information Questionnaire, the Academic Self-Efficacy Scale, and the Locus of Control Scale. The instruments making up the institutional factors in the model are, Teaching-Learning Methods Instrument (Öğretme-Öğrenme Yöntemleri Anketi) and Identifying Level of Learning Questionniare

(Öğrenme Düzeyi Belirleme Anketi). Those making up the process factors in the model are the Two Factor Revised Study Process Questionnaire and the Study Behavior Inventory. The time on task factor was incorporated into the Study Behavior Inventory by adding four items. Thus totalling five instruments implemented to the students and two to the academic staff who gave the courses the instruments were administered in. The students' year of study and outcome (course grade) was obtained via the student portal at the end of the semester.

The following two sections describe the instruments used for the presage section of the study.

3.4.1 Personal Information Questionnaire

This questionnaire was designed by the researcher and aims to gather information such as the students' student number, gender, age, nationality, university entrance exam score, the program the student is presently studying in, his/her GPA, father's education level, and mother's education level. The instrument was checked by the advisor, proofread by a colleague, tested for face-validity on 5 university students and finalized after applying it to university students in three consecutive pilot studies (see Appendix A for the final version of the Personal Information Questionnaire). The year of study is also a factor that was used as part of the personal information and was determined by looking up the students' academic term from the student portal. In order to determine the age of the student, the students' date of birth was asked for in the Personal Information Questionnaire. From this information the students' age was calculated starting from 1st September, 2011 and input into the data file as a continuous variable.

3.4.2 Academic Self-Efficacy Scale

The students' level of academic self-efficacy was measured using the Turkish version of the Academic Self-Efficacy Scale which was translated into Turkish by Yılmaz et al., (2007) from the original German version created by Schwarzer and Jerusalem (1995). The aim of this scale was to assess the students' belief that that they will complete academic tasks successfully (Yılmaz et al., 2007). The scale has one dimension and seven items with the seventh item being a reverse score item. The scale uses a four point Likert scale and has a Cronbach's alpha reliability coefficient of .87. The Turkish translation has a Cronbach's alpha reliability value of .79. Permission to use this version has been obtained (Appendix B).

In order for all the instruments to be used in this study to be of a standard format, the Likert scale of the Academic Self-Efficacy Scale was increased from 4 to 5 and the students are asked to respond to the questions via marking A – this item is never or only rarely true of me, B – this item is sometimes true of me, C – this item is true of me about half the time, D – this item is frequently true of me, and E – this item is always or almost always true of me. The scoring is as follows: A = 1, B = 2, C = 3, D = 4, and E = 5. The minimum score is 7 and the maximum is 35. The final version of this questionnaire can be seen in Appendix C.

A pilot study was conducted and after carrying out an exploratory and confirmatory factor analysis one factor was found with item number 2 being an outlier. When this was omitted from the analysis the Cronbach's alpha value was found to be .73 which is considered a 'reliable' level of reliability (Cohen et al., 2008).

Due to item two being an outlier, the wording in the question was checked and amended to read 'yeterince hazırlandığım zaman sınavlarda daima **iyi** başarı elde ederim' (When I adequately prepare for the exams I always achieve a **good** result) instead of 'yeterince hazırlandığım zaman sınavlarda daima **yüksek** başarı elde ederim'. (When I adequately prepare for the exams I always receive a **high ranking** result). The final updated version of this scale used in the actual study can be seen in appendix D.

3.4.3 Locus of Control Scale (Rotter, 1966)

This scale, originally created by Rotter (1966), aims to measure the extent to which a person believes he/she is in control of events or whether events are controlled by external factors eg. fate. The scale is made up of 29 items, with two belief statements per item. The respondent is asked to circle either statement a) or b) according to whichever is closer to their own true personal belief. Out of the 29 items, 6 are filler items (item nos. 1, 8, 14, 19, 24, and 27). These carry no points and are not used as part of the analysis. Statement a) for item nos. 2, 6, 7, 9, 16, 17, 18, 20, 21, 23, 25, and 29 receive one point and statement b) for item nos. 3, 4, 5, 10, 11, 12, 13, 15, 22, 26, and 28 receive one point. The minimum score is 0 and the maximum is 23. The higher the score, the higher the respondents' external locus of control is shown to be. Scoring between $0 - 3$ points shows extreme internal locus of control, between $4 - 11$ shows healthy locus of control and between $12 - 23$ shows external locus of control.

Rotter (1966) originally presented his Locus of Control (LOC) Scale as unidimensional and stated that via using the split-half Spearman-Brown and Kuder-Richardson method, the reliability scale ranged between .69 and .73 (Cherlin & Bourque, 1974). Other analysis have found Rotter's scale to have two factors (Ferguson, 1993) or more than

one factor (Marsh & Richards, 1987; Parkes, 1985) but these factors or subscales may not be reliable as a measuring tool (Cherlin & Bourque, 1974). Dağ (1991) translated this scale into Turkish and found a reliability measure of KR .68 and a Cronbach's Alpha internal validity of .71. Although, using the principal component analysis, he found seven factors that accounted for 47% of the variance namely: lack of control of fate, control over fate, lack of control over political events, control over political events, lack of control over academic success, lack of control over social relationships, belief in fate, he reports that these factors were not found to be sufficiently homogeneous. Taking into consideration the number of items and those that reflected the same beliefs, he reports that the factors found very closely resemble those of the original scale (Dağ, 1991). Permission for the use of the Turkish version of the questionnaire was obtained from Dağ (Appendix E). This scale can be seen in Appendix F.

A pilot study was conducted and after carrying out an exploratory and confirmatory factor analysis one factor was found. The Cronbach's alpha value was found to be .71 which is considered a 'reliable' level of reliability (Cohen et al., 2008).

The only amendment that was made to this inventory was omitting items 1, 8, 14, 19, 24, and 27 which did not have any points allocated to them. This change was made to help reduce the total number of questions implemented for the actual study.

 In the institutional section of the study, the program that the student is enrolled in was asked for in the Personal Information Questionnaire, and the teaching method and

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evaluation procedures used by the academician teaching or offering the course was asked to the instructors by using the following instruments.

3.4.4 Teaching-Learning Methods Instrument

When designing the Teaching-Learning Methods Instrument (Öğretme-Öğrenme Yöntemleri Aleti), the aim was to determine where the teachers perceive themselves to be on a continuum between expository teaching and discovery learning (Figure 4). It has been found that the use of teaching methods that focus on the mental processes will induce the use of deep study approaches (Eley, 1992; Speth & Brown, 1988).

The instrument, designed by the researcher, begins by explaining the aim of the research and then gives instructions for filling it in. This is then followed by giving the participant some brief information about expository teaching and discovery learning afterwhich they are asked to fill in the course code and name of the course they are giving together with the group number of their class.

On the second page of the instrument, the continuum between expository teaching and discovery learning can be found. The continuum consists of five notches with expository teaching on the far left and discovery learning on the far right. No numbering has been included on the notches so as not to influence the participant. A number code will be assigned for each notch during the analysis. For example the first notch on the far left which corresponds to expository teaching method solely, will be coded as zero meaning that no discovery learning is being used. The next notch on the left which corresponds to mainly expository teaching, will be coded as 1 meaning that only a little discovery learning is being used. The middle notch will be coded 2 meaning that expository and

discovery learning are being used equally. The second notch from the far right which corresponds mainly to discovery learning will be coded as 3 meaning that only a little expository teaching is being used. The notch on the very far right which corresponds to discovery learning solely, will be coded as 4 meaning that no expository teaching is being used.
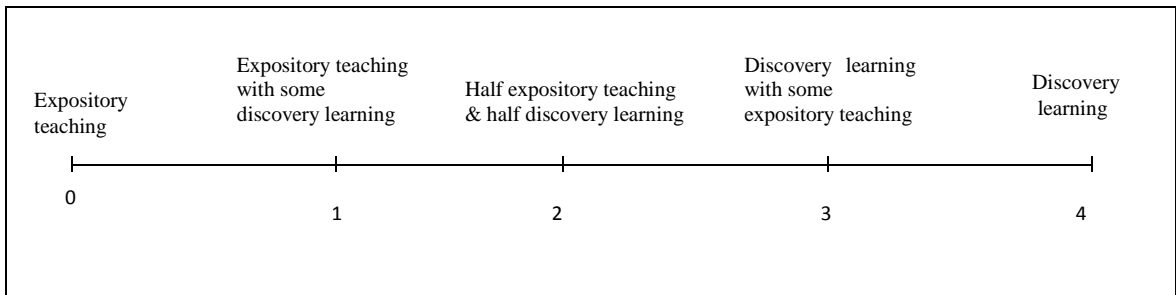
Figure 4. Continuum between expository teaching to discovery learning

The participant is asked to put a cross on the contiuum where they think their method of teaching corresponds, for the course they are filling in the form for. This can be anywhere on the continuum – on or between the notches. For further clarification, this is followed by three different examples of possible replies together with their meanings. The participants are asked to fill in a continuum for each course separately. The instrument was administered to five academicians for understanding and ease of completing. It was further reviewed and the wording simplified. The final version of this instrument can be seen in Appendix G.

3.4.5 Identifying the Level of Learning Questionnaire

When designing the Identifying the Level of Learning Questionnaire (Öğrenme Düzeyi Belirleme Anketi), the researchers' intention was to determine to what extent the teacher aims to evaluate their students via homework, projects and examinations using Bloom's Taxonomy. Studies show that alongside the teaching methods, the evaluation methods

that teachers use also influence the type of learning approach students will use (Warren, 2004). Further studies into these approaches uncovered that students study according to how they perceive they will be asked questions on the material and that the actual teaching method determines the approach the student will embark on (Butler & Cartier, 2004; Marton & Saljo, 1976b; Ramsden, 1989; Ramsden & Entwistle, 1981).

The Identifying the Level of Learning Questionnaire begins by explaining the aim of the research and then gives instructions for filling it in. This is followed by asking the participant to fill in the course code and name of the course in question together with the group number of their class. Using the cognitive domain of Bloom's taxonomy of learning domains, the questionnaire is divided into the six categories namely knowledge, comprehension, application, analysis, synthesis and evaluation with an explanation in the adjacent box and using a 5-point Likert Scale. The participants were asked to state how often and which levels of evaluation they use for homework, projects and examinations given for the course in question. An additional question has been added for the participants to state any other method that they may use (Appendix H). The participants were asked to complete a scale for each course separately. This instrument was administered to eight academicians for understanding and ease of completing. A few corrections to the explanation section was made.

The instruments used in the process section of the study were the Revised Two Factor Study Process Questionnaire (Biggs et al., 2001) and the Study Behavior Inventory (Bliss, 1987) to which four 'time on task' questions were added.

3.4.6 The Revised Two-Factor Study Process Questionnaire

The Revised Two-Factor Study Process Questionnaire: R-SPQ-2F was designed by Biggs et al. (2001). The aim was to create a questionnaire that will be "suitable for use by teachers in evaluating the learning approaches of their students" (p. 133) using fewer questions than the original Study Process Questionnaire (SPQ) (Biggs, 1987a) from which it was derived. The questionnaire measures two factors: deep approach which is subdivided into deep motive (DM), and deep strategy (DS); and the surface approach which subdivides into: surface motive (SM), and surface strategy (SS) via 5 items each and 10 items per approach. The questionnaire has the following Cronbach's alpha values for scale reliability: deep approach .73, surface approach: .64, deep motive: .62, deep strategy: .63, surface motive .72 and surface strategy .57 (Biggs et al., 2001).

Students were asked to respond to the items via marking A – this item is never or only rarely true of me, B – this item is sometimes true of me, C – this item is true of me about half the time, D – this item is frequently true of me, and E – this item is always or almost always true of me. The scoring is as follows: A = 1, B = 2, C = 3, D = 4, and E = 5. The minimum score for each approach is 10 and maximum 50 (Biggs et al., 2001).

Permission to translate and use this questionnaire (Appendix I) was obtained from the authors of the R-SPQ-2F, Biggs and Kember (Appendices J and K respectively). The translated version was first checked and corrected by an expert (bilingual and education specialist), then it was checked for grammar and comprehension by an expert, proofread and checked for face validity and comprehension. It was then back-translated into English by an independent professional translator and comparison of the back-translated

and the original questionnaires were made. Discrepancies were discussed with four bilingual English language instructors and one bilingual lecturer and decision on the final changes were reached. Finally, checks for Turkish grammar were made and the questionnaire took its final form.

The Turkish version was piloted for face-validity on a small group of 5 students (Turkish EMU students from the 2nd year of a 2-year program) and interview questions were asked regarding face validity, comprehension and ease of answering. The feedback was checked and no corrections were deemed necessary.

Both versions were tested on five bilingual speakers to check whether they found both versions to have the same meaning. Three respondents gave exactly the same answers to the Turkish and English versions of the questionnaires. The fourth respondent had one answer that didn't match in both questionnaires where she marked answers adjacent to each other; "sometimes true of me" for the English version and "True of me about half the time" for the Turkish version. The fifth respondent had three answers that differed in the two versions, again having answers in the boxes next to each other. On consulting the respondents they said it was not due to the unclarity of the questions but to do with not being sure of the answer within themselves. Hence, it was decided that there was no need for any changes.

A pilot study was conducted and after carrying out an exploratory and confirmatory factor analysis two factors were found. The deep approach with all 10 items was found to have a Cronbach's alpha reliability value of .71 and the Surface Approach with 9

items (item 4 being an outlier) ws found to have a Cronbach's alpha reliability value of .71. Both considered a 'reliable' level of reliability (Cohen et al., 2008).

As Item 4 was found to be an outlier, it was decided to omit the word 'seriously' from this item leaving it to read 'I only study what's given out in class or in the course outlines'. The final translated version of this instrument can be seen in Appendix L.

3.4.7 Study Behavior Inventory (SBI)

This inventory was designed by Bliss (1987) with the aim of determining the study habits and skills that the students have developed at this stage in their lives. It has been used in over 300 higher educational institutions in the USA and English speaking countries over the world after having been initially tested on 1,052 and later 5,000 university students yielding similar "high levels of test-retest reliability" (Bliss & Vinay, 2004, p. 28) results. The factor analysis produced three factors, namely: 1) "dealt with feelings of security, self-esteem and competitiveness" regarding academic tasks (Bliss & Vinay, 2004, p. 28), 2) "behavior related to routine, repeated academic tasks such as doing assignments and preparing for classes" (Bliss & Vinay, 2004, p .28), and 3) "involving more long range planning such as studying for an examination or preparing papers and other long-term projects" (Bliss & Vinay, 2004, p. 28). The internal consistency reliability estimates for the whole instrument and items in each of the 3 factors ranged from .70 to .88 (Bliss & Vinay, 2004).

The inventory itself is divided into three sections: a) General Study Attitudes and Behaviors, b) Reading, Writing, and Note-taking Techniques and c) Coping with Examinations with 21, 10, and 15 questions respectively totalling to forty-six questions

in the inventory with six no factor questions. The original inventory can be seen in Appendix M. The participants have a choice of 4 answers to each of the items which are lined up in 4 colums: column 1 – rarely or never true in my case, column 2 – sometimes true in my case, column 3 – often or usually true in my case, and column 4 – almost or most always true in my case. In order to keep in harmony (consistency) with the rest of the questionnaires to be used in this research, the answer columns were increased to five as follows: column 1 –rarely or never true in my case, column 2 – sometimes true in my case, column 3 – true about half the time in my case, column 4 – often or usually true in my case and column 5 – almost or most always true in my case. The points allocated for the answers in each column start from one point for column one, increasing one point for each column and ending with 5 points for column five. Permission was received from Bliss to translate and use the inventory for research purposes (Appendix N).

3.4.7.1 Translation Procedures for the SBI

The Study Behavior Inventory was translated into Turkish by the researcher (bilingual and Educational Sciences Ph.D. student) and was checked and corrected by an expert (bilingual and Education specialist). It was then checked by a Professor who is an English language teaching specialist, back-translated into English by a professional translator. The discrepancies of the translation and back translation were noted and checked over with two professionals and the necessary amendments were made.

3.4.7.2 Addition of Time on Task Items to the SBI

Studies show that insufficient effort in terms of time spent on an academic task leads to low or underachievement (Lau & Chan, 2001). Although the number of hours that a student studies is an important factor for academic success, what they do while studying is also important. The time on task questions were designed with these points in mind,

aiming to determine a) the number of hours a student spends per week and b) what type of study habits they are spending their time on. The latter was further divided into:

a) summarizing, classifying, and systemizing facts learned and associating them with previously learned materials and facts;

b) reading a textbook assignment, stopping periodically and mentally reviewing the main points that have been presented;

c) going over class notes;

d) preparing for class by reading or studying the topic (material).

Four 'time on task' questions were added to the 'Reading, Writing and Note-taking Techniques' section. The first one was added after item 23 and read 'How many hours do you spend per week summarizing, classifying and systemizing facts learned, associating them with previously learned materials and facts?'; the second one was added after item 27 and read ' How many hours per week do you spend reading a long textbook assignment, stopping periodically and mentally reviewing the main points that have been presented?'; the third one was added after item 29 and read 'How many hours per week do you after a class lecture go back and recite to yourself the material in your notes – rechecking points you found doubtful?'; and the fourth one was added after item 31 and read 'How many hours per week do you prepare by reading or studying the topic (material) before attending class?' The whole questionnaire, with the four time on task

questions, was prepared as a Powerpoint presentation and proofread by two professionals. As a mini pilot study, the Powerpoint questionnaire was administered to four students in order to check for understanding and ease of completing, where a few typographical errors were found and corrected. Finally the instructors, in whose class the questionnaires were to be administered, were consulted regarding how relevant the items were for their course. For example, were they giving homework, projects, essay questions, multiple choice questions, etc., to their students in their course? As a result of this, some items were not found to be relevant but it was decided to keep all the items in the inventory but by adding 'If you were given' 'Eğer verilse' to the items that were not relevant to some courses. We added one extra item 'I use the internet too much and this interferes with my studies' (Çok fazla internet kullanıyorum ve bu ders çalışmamı engelliyor) after the item 'I watch too much television and this interferes with my studies' (Çok fazla televizyon seyrediyorum ve bu da ders çalışmamı engelliyor) as it was thought this would also be relevant to the students' study behavior.

A pilot study was conducted and after carrying out an exploratory and confirmatory factor analysis four factors were found. The Cronbach's alpha reliability of factor one which has items concerned with the prepration for specific 'long range tasks' has a reliability coefficient of .80 which is considered 'highly reliable', factor two which has items concerned with 'academic self-efficacy' has a reliability coefficient of .79 which is considered 'reliable' bordering on 'highly reliable' and factor three which has items concerned with the 'social aspect of studying and time management' has a reliability coefficient of .5 which is considered 'unacceptable' (Cohen et al., 2008). All the items in the SBI were used in the actual study as the sample size was much larger.

3.5 Data collection Procedures

For the actual study the Turkish versions of the Self-Efficacy Scale, Revised Two Factor Study Process Questionnaire, Study Behavior Inventory and the Locus of Control Scale were prepared as PowerPoint slides totalling 101 questions (Appendix O). Final checks and minor changes were made to the items to ease comprehension.

In order to be able to administer the five questionnaires to the second, third, and fourth year students enrolled in the different programs within the Faculty of Education in the Eastern Mediterranean University in North Cyprus taking either EGIT215 Principles and Methods of Teaching (Öğretim İlke ve Yöntemleri), EGIT216 Scientific Research Methods (Bilimsel Araştırma Yöntemleri), EGIT218 Teaching Technologies and Material Design (Öğretim Teknolojileri ve Materyal Tasarımı), EGIT320 Special Teaching Methods II (Özel Öğretim Yöntemleri II), EGIT321 Class Management (Sınıf Yönetimi), EGIT419 Counselling (Rehberlik), EGIT421 Education Management (Eğitim Yönetimi), EGIT450 Student Centered Education (Öğrenci Merkezli Eğitim), or RPDA313 Stages of Life and Adaptation Problems (Yaşam Dönemleri ve Uyum Problemleri), the researcher wrote a letter to the Head of Deparment of the Educational Sciences asking permission for implementation. This letter was forwarded to the Dean of the Faculty of Education and then to the Rectorate. Permission was duly granted by the Vice Rector for Academic Affairs (Appendix P).

On receiving the permission to administer the inventories, the author got in contact with all the teachers teaching the courses in which the questionnaires were to be implemented and agreed on mutually suitable dates for administration, on purposly

chosing dates between the midterm and final exams so that the students had the opportunity to get to know the course, teacher and experience some sort of examination and feedback.

The planning of the administration of the questionnaires to the 9 courses totalling 34 groups were carefully done and a five week timetable was prepared. Due to problems being faced in the initial pilot, changes were made to the method of collection starting from the 2nd pilot study. Initially, in the first pilot study, after the research aim and the administrator were introduced to the participants by the class instructor, paper copies of the questionnaires were distributed and the administrator invigilated the process while the participants filled in their questionnaires. Those who completed filling in their questionnaires were allowed to leave the classroom so as to minimize distraction to the others. This action, unfortunately, backfired as the non-completers were noticed to rush their answers ticking quickly without even reading the items so that they could join their peers outside. This was one of the many problems noticed by the administrator which was thought would lead to a reliability hindrance. Other such hindrances were the inability of the administrator to monitor every participant continuously through signs of body language which pointed to either difficulty in answering items, and unwillingness to answer wholeheartedly although prior consent was obtained. This was mainly due to two reasons: 1) while helping students with a quiery, the administrator would not be able to notice what the others were experiencing and 2) any explanation to items given by the administrator would not be paid any attention to, due to the participants being at different stages in the completion of their questionnaires. Proof of this was found at the end of the session when the questionnaires were collected and the answer sections were

checked. Some of the answer sections were ticked in a symmetrical pattern indicating that they may have been concentrating on creating an arty design rather than concentrating on the items. On further cross examination, where their answers were cross checked with items of the same nature, there were contradictory answers showing that those participants did not complete their answers willingly.

The problems faced with this type of administration resulted in the formation of a new method. It was decided that a PowerPoint version of the questionnaire would be prepared. The first few slides would introduce the purpose of the study, and the questionnaire/inventories. This would be followed by each item with the possible response alternatives portrayed on a slide such as the 5-Point Likert scale used in our study (A = this item is never or only rarely true of me, B = this item is sometimes true of me, C = this item is true of me about half the time, D = this item is frequently true of me, and E = this item is always or almost always true of me). The whole process would be conducted using these slides. This would eliminate the following expensive and time consuming factors: 1) Process of designing manual questionnaires to fit a minimum number of pages but at the same time be readable and understandable for the participants; 2) having to do a pilot study of the manual questionnaires/inventories for comprehension and ease of completion based on the design; 3) photocopying one questionnaire for each participant totalling to a number equal to the sample size, and 4) burden of carrying a heavy load of questionnaires to different venues for administration. For all these reasons the Synchronous Technological Administration Method (STAM) was created to be used when collecting data in group administration settings as it seems to be a more economical, feasible, reliable and easier to administer**.**

This new method was used for two pilot studies and for the actual study. The procedure began by the Lecturer of each course introducing the administrator and her aim in doing the research and asking for the students' consent to participate. Those who really did not want to do it were allowed to sit quietly or leave the classroom. The administrator commenced the process by explaining the general aim of the research and distributing the Personal Information Questionnaire for the students to fill in and at the same time distributing the optic forms. On the completion of the Personal Information Questionnaire, the Powerpoint presentation of the instruments was started by the administrator with her explaining the aim and instructions for the completing of the instrument. This was proceeded by the administrator reading out each question and possible answers and waiting for every student to finish completing their answer on the optic form. The whole implementation varied between 35 – 50 minutes.

Using the STAM for collecting data proved beneficial in many ways. First, the students took interest in the items and seemed to look forward to the 'next slide', some even asking for more items at the end of the application, thus showing their enthusiasm towards the procedure. Second, during the administration the researcher was able to spot students who seemed to be filling in the questionnaires halfheartedly and not taking the administration seriously. These students were noted to be filling in the optic form before the items were shown or read out, or be in continuous conversation with their friends and therefore not listening to the items or looking at the slides. When this type of behavior was noted by the administrator, she was able to stop the administration to talk about the importance of everyone's sincere responses and to coax them into concentrating on filling in the optic form. As this interruption is done after the current

item has been completed by everyone, this interruption is believed not to disturb anybody; whereas in the classical group administration, where everybody is not working on the items synchronously as in STAM but instead working at their own pace, it is not right to make this type of interruption as this will disturb respondents who are trying to concentrate on filling in the questionnaires. Third, the STAM catered for students with different learning styles. For example, the administrator noticed a student with his back to the screen where the items were being projected and asked if he would like to change his seat so that he could follow the PowerPoint slides. The student said that he preferred to 'just listen' to the items as he was able to concentrate better this way. This would not be possible in the classical administration method, as the respondents would have to read the items before responding to them. Fourth, students with visual or aural handicaps can still be included in the research since PowerPoint presentation caters for the needs of the hearing-impaired and the administrator's voice caters for the needs of the visually impaired. Fifth, by looking at the students' facial expressions after an item was read out and shown on the screen, the administrator could ascertain whether anyone had any problems with understanding the item and provide any necessary explanation without disturbing any of the respondents. Sixth, by looking at the students' body language, the administrator was able to assess how quickly to move from item to item. Seventh, the administrator was able to notice students who needed more time to respond to some of the items and told them that they could come up to the administrator at the end of the session to go over the items they needed more time on. A few students in each group did benefit from this opportunity. There were three to four students in most classes who fell into this category.

This method was designed in order to remedy the problems faced when implementing the classical manual group administration method. It uses technology in two stages; one during the actual administration, and one for plugging in the data from optic forms via an optic reader to the statistics program so it also has the added benefit of relieving the researcher of the arduous ordeal of manually plugging in the data.

3.6   Data Analysis Methods

Once all the data had been gathered, each optic form was checked against the Personal Information Questionnaire and any student numbers which had been omitted were filled in. The optic forms were then checked for clarity. Those written in anything else but pencil were carefully copied to another optic form by the administrator. Those which had marks that had not been efficiently erased were rubbed out. Lightly coloured or slightly coloured circles that the optic reader may not be able to read were darkened.

The information presented on each Personal Information Questionnaire was checked and/or completed by the adminstrator via the student portal. The optic forms were then read and saved onto Notepad. The data was checked for missing data and double entry. Items misread by the optic reader were corrected. The data was transferred to SPSS (version 18).

3.6.1   Personal Information Questionnaire

The students' gender, date of birth, nationality, university entrance score, program they are enrolled in, course code and group number, GPA, year of study, fathers' and mothers' education level marked on the Personal Information Questionnaire were individually plugged into the SPSS program version 18.0 alongside the data already read

from the optic forms. As can be seen from Table 3 the factors were coded in the following fashion: gender was coded 1 for female and 0 for male. The age of the student was calculated starting from 1st September, 2010 using a formula within the SPSS program and input as a continuous variable. Each students' age was added to a column titled 'age' to the data set. Nationality was coded 1 for Turkish Cypriot and 0 for Turkish. The university entrance score was found from the portal and plugged in.

The programs were given a code as follows: A2 (Guidance and Psychological Counseling program) was coded '1', A3 (Turkish Language Teaching program) was coded '2', A4 (Pre-school Teacher Education program) was coded '3', A5 (Middle School Math Teacher Education program) was coded '4', AC (Music Teaching program) was coded '5', AD (Elementary School Teacher Education) was coded '6', AE (Social Sciences Teacher Education program) was coded '7' and all others for example AA (Science Teacher Education program), AB (Math Teacher Education program), and AF (Turkish Language and Literature Teacher Education program) were coded '8' and plugged into a new column named program code. Following this, seven dummy variables were created as "one fewer dummy variables than categories" need to be used so as to avoid perfect multicollinearity which can prevent the least squares regression estimates to be obtained (Groebner et al., 2008, p. 703). They were coded as follows: X_1 = '1' if A2 '0' if not, X_2 = '1' if A3 '0' if not, X_3 = '1' if A4 '0' if not, X_4 = '1' if A5 '0' if not, X_5 = '1' if AC '0' if not, X_6 = '1' if AD '0' if not, X_7 = '1' if AE '0' if not.

The course code and group number was plugged in. The students' GPA's were found from the portal and plugged in as continuous data. The year of study was found from the

portal according to academic term and plugged in. Fathers' and mothers' education level were coded as follows 1 for illiterate, 2 for literate, 3 for primary school graduate, 4 for middle school graduate, 5 for lycee or equivalent, 6 for a two year diploma or equivalent, 7 for undergraduate diploma, 8 for a masters degree and 9 for Ph.D. holders and above. On completion, printout of the data sets were obtained and the data was checked against the optic forms and the necessary corrections were made. Following this, the grades obtained by the students for each of the courses were found from the student portal and plugged into the data set using the following code: F = 1; D- = 2; D = 3; D+ = 4; C- = 5, C = 6; C+ = 7; B- = 8; B = 9; B+ = 10; A- = 11; A = 12.

Table 3. *Coding used for factors when plugging data into SPSS program*

Factors	Coding used
Gender	Female = 1; Male = 0
D.O.B.	Plugged in as a date. Using a formula found the age as from 1st September, 2011. This was put under a new column titled 'Age'
Nationality	Turkish Cypriot = 1; Turkish = 0
Uni. entr. score	Found from portal and plugged in eg. 322
Program	A2 = 1; A3 = 2; A4 = 3; A5 = 4, AC = 5; AD = 6; AE = 7; AA, AB, and AF were coded 8 and dummy variables were created
Course code & grp.	Plugged in eg EGIT215-01
GPA	Checked from portal and plugged in eg. 3.45
Year of study	Found from portal via the academic term and plugged in eg. 3
Fathers' education	1 = illiterate; 2 = can read and write; 3 = primary schl; 4 = middle schl; 5 = lyce/equiv; 6 = 2 yr diploma; 7 = undergrad; 8 = masters; 9 = Ph.D.
Mothers' education	1 = illiterate; 2 = can read and write; 3 = primary schl; 4 = middle schl; 5 = lyce/equiv; 6 = 2 yr diploma; 7 = undergrad; 8 = masters; 9 = Ph.D.
Course grade	F = 1; D- = 2; D = 3; D+ = 4; C- = 5, C = 6; C+ = 7; B- = 8; B = 9; B+ = 10; A- = 11; A = 12

The raw data transferred from the optic forms to SPSS were in letter form. Using the appropriate formula, the A's which carry the meaning of 'this item is never or only rarely true of me' were transposed to read '1', the B's which carry the meaning of 'this item is sometimes true of me' to '2', C's which carry the meaning of 'this item is true of me about half the time' to '3', D's which carry the meaning of 'this item is frequently true of me' to '4' and E's which carry the meaning of 'this item is always or almost always true of me' to '5'.

All the reverse questions in all the questionnaires were reverse coded using the appropriate formula.

Exploratory factor analysis for each instrument was performed using SPSS (version18.0) and confirmatory factor analysis was conducted using AMOS (version 18) afterwhich the reliability, using Cronbach's alpha values, for each factor were obtained. The following results were found for each questionnaire.

3.6.2 Turkish Version of the Self-Efficacy Scale

Out of the 829 valid cases only two missing data were found and this was filled in with the factor mean. A exploratory factor analysis was conducted with the missing data filled in with the factor means using direct oblimin for rotation, as all the items are correlated, again found one factor, showing the percentage of variance to be 40.341%. All seven of the items fell into column one of the component matrix and ranged between .487 to .782. The Kaiser-Meyer-Olkin measure of sampling adequacy was found to be .812 which is considered to be in the 'meritorious' category of sampling adequacy

(Kaiser, 1974). The Bartlett's test of sphericity was found to remain significant at $X^2(21) = 1113.145$, $p < .000$ (Ho, 2006).

A confirmatory factor analysis was conducted using AMOS (v. 18) fixing the latent variable variances to 1.00. For the goodness-of-fit measures, it was decided not to use the chi-square as samples with large sizes may distort the values (Kahn, 2006; Kyle, 1999; Arbuckle, 2007), instead the Goodness-of Fit Index (GFI) introduced by Jöreskog and Sörbom (1986) where the values range between 0 and 1.0, 0 indicating a poor fit and .90 indicating an excellent fit (Taub, 2001); the Compartative Fit Index (CFI) by Bentler (1990) should be .90 or even preferably .95 or above for a good fit; and Root Mean Square Residual (RMSEA) introduced by Steiger and Lind in 1980 (Albright & Park, 2009) is said to be a good fit if it is 0.05 and lower (Kyle, 1999) or even 0.06 or lower is also suggested to show a good model fit (Kahn, 2006); PCLOSE, which is a significance test for a close fit, shows whether the null hypothesis that the RMSEA is less than .05 is significant (Tufiş, 2009). In order for a good fit P needs to be larger than .50 (Hiers, O'Brien, Will, & Mitchell, 2007). For this instrument it was found that after removing items 21 and 27 the GFI was found to be .994, CFI to be .991, RMSEA to be .049, and PCLOSE to be .467 showing the items in this factor to be a very good fit. The Cronbach's alpha reliability value for this inventory was found to be .73 which is considered 'reliable' (Cohen et al., 2008).

Table 4 shows the Cronbach's alphas of the original German version, original Turkish translated version, first pilot study and actual study.

Table 4. *Cronbach's alpha for Academic Self-Efficacy Scale (original German version, Turkish translation pilot study & actual study)*

Versions	Original German version (Schwarzer & Jerusalem, 1995)	Turkish translated version (Yılmaz et al., 2007)	Pilot study	Actual study
Reliability (Cronbach's alpha)	0.87	0.79	0.70	0.73

Following this analysis, the mean for each case was calculated and placed under a column titled 'academic self-efficacy mean'.

3.6.3 Turkish Version of the Locus of Control Scale

Out of the 829 valid cases there were 14 cases with missing data which was filled in with the factor mean. An exploratory factor analysis, using the principal component for the extraction method and direct oblimin for the rotation, as the instrument is intended to be unidimentional, was conducted.

The Kaiser-Meyer-Olkin measure of sampling adequacy was found to be .756 which is considered a 'middling' level of sampling adequacy (Kaiser, 1974) and the Bartlett's test of sphericity was found to be significant at $X^2(253) = 1543.403$, p< .000 (Ho, 2006). Using Cattell's scree testing method, where the foremost factors were determined according to the first break in the line before the formation of the 'rubble' (Catell, 1966), one factor was found.

All twenty-three of the items fell into column one of the Component Matrix. Factor one accounted for 13.349% of the total variance. The loadings of the items ranged between .217 to .581. As the suggested acceptable loading is .32 (Tabachnick & Fidell, 2001) the three items with insufficient loadings were not included in the reliability analysis.

This finding was confirmed when a confirmatory factor analysis was conducted using AMOS (version 18.00) fixing the latent variable variances to 1.00 and showing the model to include all the items to belonging to one factor.

When these items were deleted the goodness-of-fit summary values were found to be .968 for GFI, .912 for CFI, .028 for RMSEA, and 1.00 for PCLOSE all showing the items in this factor to be a good fit.

The Cronbach's Alpha for the whole instrument was found to be .68 which is considered to be 'marginally reliable' (Cohen et al., 2008) and very near to the original and Turkish versions as can be seen in Table 5. The Item-total Statistics table was checked to see if the Cronbach's Alpha could be raised by eliminating any question but it was found that the eradication of any item would lower the reliability.

Table 5. *Cronbach's alpha for Locus of Control Scale (original English, translated Turkish pilot & actual study)*

	Original English version (Rotter, 1966)	**Turkish translation (Dağ, 1991)**	**1st pilot study**	**Actual study for this research**
Reliability	Kuder-richardson 0.70	Cronbach's alpha 0.70	Cronbach's alpha 0.72	Cronbach's alpha .68

Due to the goodness-of-fit for the LOC Scale with all the items except for item nos. 80, 94, and 101, the discriminant validity of this factor for this scale was assessed before using the mean average point scored for each case in the path analysis. Afterwhich the LOC mean for each student was calculated and placed under a column titled 'locus of control mean'.

In the institutional section of the study, the program the student is enrolled in was asked in the Personal Information Questionnaire, the teaching method and evaluation procedures used by the academician giving the course was asked using the 'Teaching-Learning Methods Instrument (Öğretme-Öğrenme Yöntemleri Aleti) (Appendix G) and the 'Identifying Level of Learning Questionnaire' (Öğrenme Düzeyi Belirleme Anketi) (Appendix H). These were given to the teachers on the day the questionnaires were being administered to their students. The researcher started with a brief explanation regarding the aim of the research and the method of filling in the instrument and questionnaire. The teachers were left to fill these in at their leisure and to hand back when they were ready. In total 14 instructors took part in the study.

3.6.4 Teaching-Learning Methods Instrument

The information gathered on the 'Teaching-Learning Methods Instrument' were based on how well the teachers knew and to what extent they taught using the expository and/or discovery method in that course. The coding for how well they knew each method was 1 for 'didn't know it at all', 2 for 'knew it a bit', 3 for 'knew it quite well', and 4 for 'knew it very well'. The percentage marked on the form by the teacher of each course for the extent they used each method was used in each course was plugged in as the percentage mark under the columns titled 'expository teaching' and 'discovery leaching'.

3.6.5 Level of Learning Questionnaire

The information gathered on the Level of Learning Questionnaire were based on four categories: homework, exams, projects, and other where the teachers were asked to fill in at what level of learning was required for that particular category whether it was at the knowledge, comprehension, application, analysis, synthesis or evaluation level using a

Likert scale. The Likert scale was coded as follows: 1 for 'never/hardly ever used', 2 for 'sometimes used', 3 for 'used half the time', 4 for 'usually used', and 5 for 'used always/nearly always'. After plugging in the data, the course outlines were obtained and using the weights given for each category, the weighted means were calculated and placed under a new label titled 'evaluation procedure weighted mean'.

All in all the Teaching-Learning Methods Instrument an Level of Learning Questionnaire was conducted in nine courses and a total of 34 classes where 13 Instructors participated.

The process section of the study includes the Turkish versions of the Revised Two-factor Study Process Questionnaire (R-SPQ-2F), and the Study Behavior Inventory with the added time on task questions.

3.6.6 Turkish Version of the R-SPQ-2F

Out of the 829 valid cases eleven missing data were found and these was filled in with the factor means. The exploratory factor analysis which was conducted using varimax rotation as all the items are not correlated. The Kaiser-Meyer-Olkin measure of sampling adequacy was found to be 0.91 which is considered a 'marvelous' level of adequacy sample (Kaiser, 1974). The Bartlett's test of sphericity was found to be significant at $X^2(190) = 4387.874$, p< .000 (Ho, 2006). The surface approach items were found to fit into one factor with the loadings ranging between .417 to .673 and all but two of the deep approach items fitting into the second factor and their factor loadings ranging between .411 and .741.

Based on the breaking point of the scree in the scree plot pointing to two factors, the two items forming a new factor are item 2 'I find that I have to do enough work on a topic so that I can form my own conclusions before I am satisfied' and item 10 'I test myself on important topics until I understand them completely' seem to be an outlier.

Following this a confirmatory factor analysis was conducted creating a two factor model with all the deep approach items in one factor and all the surface approach items in another factor. The latent variable variances were fixed to 1.00.

For the goodness-of-fit measures the GFI, CFI, RMSEA, and PCLOSE were used. The results showed GFI to be .950, CFI to be .937, RMSEA to .049, and PCLOSE to be .643 showing the items in each factor to be a good fit.

The Cronbach's alpha for the deep approach (without item 2) and the surface Approach (without item 20) were both found to be .808. Both factors showing they are 'highly reliable' (Cohen et al., 2008).

As can be seen from Table 6, these results are bestter than those obtained for the pilot study undertaken for this questionnaire.

Table 6. *Cronbach's alphas for R-SPQ-2F (original English version, Turkish version used in pilot study & actual study)*

Item	Cronbach's alpha for the original English version	Cronbach's alpha for the translated Turkish version (pilot study)	Cronbach's alpha for the translated Turkish version (actual study)
DA	0.73	0.71	0.81
SA	0.64	0.71	0.81

Following this analysis the discriminant validity of the factors were conducted.

3.6.7 Turkish Version of the Study Behavior Inventory

The four time on task questions which were embedded in this inventory were taken out to be analysed separately.

Following the factor analysis method used by designers of the SBI, an exploratory factor analysis was conducted with all the items exluding the 'no factor' questions "using the principal components model with iteration and varimax rotation" (Bliss & Mueller, 1986, p. 3). The small coefficients were suppressed to below .34. Out of the 829 valid cases twenty-two missing data were found. These were filled in with the factor means after conducting the exploratory factor analysis. The Kaiser-Meyer-Olkin measure of sampling adequacy was found to be .860 showing the sample size was 'meritorious' (Kaiser, 1974) and the Bartlett's Test of Sphericity was found to be significant at $X^2(820) = 7762.551$, p< .000 (Ho, 2006). From this analysis ten factors were found based on the eigenvalues above 1.00 criterion but as this does not always portray the correct numer of factors, (Yeomans & Golder, 1982) the Scree Plot method for assessing the number of factors based on the 'breaking point' of the line (Catell, 1966), was used whereby it could be seen that there were four main factors as was also found in the original English version.

The items in factor one were similar to the original English version and "seemed to deal with feelings relating to low security, poor self esteem, and lack of competence" (Bliss & Mueller,1986, p. 10), which could be labelled 'academic self-efficacy' as the items were reversed. After rotation, this factor accounted for 7.940% of the total variance. The

items in factor two were regarding preparation for long range tasks and could be labelled 'long range task' and after rotation accounted for 7.623% of the total variance. The items in factor three seemed to be about daily, routine tasks and could be labelled 'routine task' and after rotation accounted for 6.794% of the total variance. Finally factor four seemed to be about time management and could be labelled 'time managment' and after rotation accounted for 6.389% of the total variance.

A confirmatory factor analysis was conducted using AMOS (version 18.00). The GFI was found to be .955, CFI to be .921, RMSEA to be .050, and PCLOSE to be .477 making the items in each facto an acceptable fit.

The Cronbach's alpha for the first factor labelled 'academic self-efficacy' containing 5 items: 74, 66, 67, 65, and 71 was found to be .70. The Cronbach's alpha for the second factor labelled 'long range task' containing 5 items: 61, 56, 51, 38, and 59 was found to be .72. The Cronbach's alpha for the third factor labelled 'time managment' containing 6 items: 45, 34, 62, 43, 32, and 44 was found to be .70. The Cronbach's alpha for the whole instrument totalling 16 items was found to be .78. All of the reliability coefficients are considered as reliable values (Cohen et al., 2008).

3.6.8 Time on Task

For the time on task section, the time on task items were coded based on the average hour (per week) for each answer. The average number of hours studied per answer was taken in that A = 'don't study at all' and coded '0', B = 'maximum 2 hours' coded '1', C = 'between 3 – 7 hours' coded '5', and D = 'between 9 – 15 hours' so coded '12' and E = 'more than 16 hours' so '18'.

An exploratory factor analysis was conducted using direct oblimin as the items were correlated. The Kaiser-Meyer-Olkin measure of sampling adequacy was found to be .71 which is considered a middling sample adequacy (Kaiser, 1974). One factor was found accounting for 58.781% of the variance. The Cronbach's alpha for the time on task factor was found to be .77 which is considered a reliable value (Cohen et al., 2008).

3.7   Validity and Reliability

When creating or assessing inventories, construct validity analysis which consists of convergent and discriminant validity needs to be conducted after exploratory and/or confirmatory factor analysis (Farrell & Rudd, 2009). It is important to conduct these analysises as their omission may result in inaccurate results (Farrell & Rudd, 2009). Convergent validity is established when items correlate highly onto the factor it is assumed to belong to and discriminant validity is established when the items assumed to belong to one factor load only onto their own factor with no cross loadings on any other factor to be used in the study (Gefen & Straub, 2005).

One method for conducting discriminant validity analysis is by using the Principal Components Analylsis (PCA) where the eigenvalues of 1.00 or above criteria or the Scree Tail Test criterion is used. Item loadings need to be .40 and above and no item should have a cross-loading of .40 onto any other factor, those that cross-load should be dropped (Hair, Anderson, Tatham, & Black, 1998). The same method using PCA with eigenvalues of 1.00 and above or the Scree Tail Test criterion can be used to conduct convergent validity. There is convergent validity if the items of the proposed factor load

with a minimum of .40. Items with lower loadings should not be included in further analysis (Hair et al., 1998).

The construct validity, both discriminant and convergent validity, for this study was conducted in two stages, first, each factor was analysed separately using the exporatory factor analysis in order to check that all the items fell into the assumed factors and that their loadings were above .40. Second, after establishing the items that belong to each factor with loadings above .40, all the items belonging to the established factors were used to conduct a final exploratory factor analysis to check they all fell into their own factors, there were no cross loadings above .40, and that all the loadings were above .40.

3.7.1 Validity and Reliability for Academic Self-Efficacy Scale

An exploratory factor analysis using Principal Components Analysis was conducted on the five items (22, 23, 24, 25 and 26) remaining as a result of the confirmatory factor analysis of the Academic Self-Efficacy Scale. Direct oblimin for rotation, as all the items are correlated, and eigenvalues above 1.00 criterion was used.

All five of the items fell into column one of the component matrix and ranged between .553 to .819 which is higher than the suggested .40 cutoff showing discriminant validity (Hair et al., 1998). As all the items in the inferred factor have loadings of above .40, this shows that there is also convergent validity for this factor (Hair et al., 1998).

The Cronbach's alpha coefficient for this instrument was found to be .73 which is considered to be reliable (Cohen et al., 2008).

3.7.2 Validity and Reliability of the Turkish Version of the LOC Scale

An exploratory factor analysis using Principal Component Analysis was conducted on the twenty items, (79, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 95, 96, 97, 98, 99, and 100) remaining as a result of the confirmatory factor analysis of the Turkish version of the LOC Scale. Varimax rotation, as the items were not correlated, and eigenvalues above 1.00 criterion was used and the coefficients below .39 (which can still be considered .40) were supressed. A Component Matrix produced six items (98, 93, 79, 89, 91, and 87) with item loadings of above .40, ranging between .455 and .689, showing both discriminant and convergent validity (Hair et al., 1998).

The Cronbach's alpha for the LOC Scale with the remaining six items (98, 93, 79, 89, 91, and 87) was found to be .60 which is considered minimally reliable (Cohen et al., 2008).

3.7.3 Validity and Reliability for Turkish Version of the R-SPQ-2F

An exploratory factor analysis using Principal Component Analysis was conducted on the eighteen items (1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19) remaining as a result of the confirmatory factor analysis of the Turkish version of the R-SPQ-2F. Varimax rotation, as the items were not correlated, and eigenvalues above 1.00 criterion was used.

The Rotated Component Matrix shows items 16, 4, and 10 to fall into a third category. These items were noticed to also have the lowest loadings (.40, .38, and .33 respectively) on the final confirmatory factor analysis model and were removed before the exploratory factor analysis was rerun. The results showed two clean factors. All the deep approach

items fell onto factor one labelled 'deep approach' with loadings ranging between .437 to .721 and all the surface approach items fell into the second factor labelled 'surface approach' with loadings ranging between .543 and .720. Thus showing both discriminant and convergent validity. The Cronbach's alpha for the deep approach with 8 items (1, 5, 6, 9, 13, 14, 17, and 18) was found to be .81 which is considered to be highly reliable (Cohen et al., 2008) and the surface approach with 7 items (3, 7, 8, 11, 12, 15, 19) was found to be .80 which is considered to be highly reliable (Cohen et al., 2008).

3.7.4 Validity and Reliability for Turkish Version of the SBI

An exploratory factor analysis using Principal Components Analysis was conducted on the sixteen items (74, 66, 67, 65, 71, 61, 56, 51, 38, 59, 45, 34, 62, 43, 32, and 44) remaining as a result of the confirmatory factor analysis of the Turkish version of the SBI. Varimax rotation, as the items were not correlated, and eigenvalues above 1.00 criterion was used.

The Rotated Component Matrix shows that items 51, 56, 61, 38, 59, 32, and 44 fall into the first factor labelled 'long range tasks' taking with it items 32 and 44 from the 'time management' factor. The loadings range between .457 and .718. Items in the second factor labelled 'academic self-efficacy' contain items 65, 74, 66, 67, and 71 with loadings ranging between .583 and .708. The items falling into the third factor labelled 'time management' are 34, 45, 43, and 62. The loadings for these items range between .691 and   .598. These results show these factors to have discriminant and construct validity (Hair et al., 1998).

The Cronbach's alpha for factor one 'long range tasks' with seven items (including the addition of items 32 and 44) was found to be .76 which is considered reliable (Cohen et al., 2008). The Cronbach's alpha for factor two 'academic self-efficacy' with five items was found to be .695 which can be rounded to .70 and can therefore be considered reliable (Cohen et al., 2008). The Cronbach's alpha for factor three 'time management tasks' with four items (exluding items 32 and 44 which were originally included in the confirmatory factor analysis) was found to be .64 and is considered minimally reliable (Cohen et al., 2008).

As the Turkish version of the Academic Self-Efficacy Scale (Yılmaz et al., 2007) yielded a reliability coefficient of .73, it was decided to use this factor in the path analysis and omit the academic self-efficacy factor within the SBI, as it only produced a slightly lower reliability coefficient of .695 which was rounded to .70

Having checked the construct validities of all the instruments separately and having made the necessary amendments, an exploratory factor analysis using Principal Components Analysis was used to conduct discriminant and convergent validity by inputting all the items for the six factors found. Varimax rotation was used.

As can be seen from Table 7, after removing item 62 (a SBI long range item falling into the deep approach factor) and item 32 (a SBI long range item not loading onto any component) as well as removing item 34 (a SBI long range item which loaded onto two components with a value higher than .40) and the remaining two time management items (45 and 43) as more than two are required to represent a factor, all the items snugly fell

into only their own factor showing discriminant validity and the loadings for all the items were above .40 showing convergent validity.

Table 7. *Rotated component matrix for Academic Self-Efficacy Scale, R-SPQ-2F, LOC Scale, & SBI with 31 items redone for construct validity (actual study)*

	Component				
	1	2	3	4	5
Deep approach Q14	.726				
Deep approach Q17	.678				
Deep approach Q9	.646				
Deep approach Q13	.614				
Deep approach Q18	.585				
Deep approach Q6	.561				
Deep approach Q5	.483				
Deep approach Q1	.407				
Surface approach Q8		.713			
Surface approach Q15		.662			
Surface approach Q11		.656			
Surface approach Q12		.638			
Surface approach Q19		.622			
Surface approach Q7		.590			
Surface approach Q3		.540			
S-efficacy Q24			.773		
S-efficacy Q25			.723		
S-efficacy Q23			.672		
S-efficacy Q22			.595		
S-efficacy Q26			.563		
SBI routine Q61				.696	
SBI long range Q56				.665	
SBI long range Q51				.622	
SBI long range Q59				.573	
SBI long range Q38				.520	
Locus of control Q93 a=1					.684
Locus of control Q98 a=1					.668
Locus of control Q79 a=1					.591
Locus of control Q91 a=1					.508
Locus of control Q89 b=1					.507
Locus of control Q87 b=1					.477

In order to ascertain the reliability of the factors, Cronbach's alpha was used and the follow results were achieved (Table 8).

Table 8. *Reliability values for academic self-efficacy, LOC, deep approach, surface approach, and long range tasks factors with number of items per factor*

Factors	Number of items	Cronbach's alpha	Reliability levels
Academic self-efficacy	Five items (26, 25, 24, 23, 22)	.73	Reliable
LOC	Six items (98, 93, 79, 89, 91, 87)	.60	Minimally reliable
Deep approach	Eight items (1, 5, 6, 9, 13, 14, 17, 18)	.81	Highly reliable
Surface approach	Seven items (3, 7, 8, 11, 12, 15, 19)	.80	Highly reliable
Long range tasks	Five items (61, 56, 51, 38, 59)	.72	Reliable

The LOC Scale yielding a 'minimal' level of reliability with a Cronbach's alpha coefficient of .60 was a disappointing result. This could be due to the scale requiring the respondent to choose between option 'a' or option 'b' and not giving them the chance to state to what extent either was true of them in which case the use of a Likert scale could have yielded better results. As the scale reduced to six items has a minimal reliability it was decided to use it in the path analysis bearing in mind the level of reliability.

Based on the results of the construct validity analysis, the factors for each of the learning processes are as follows:

- Learning approaches has two factors 1) deep approach and 2) surface approach.

- Study behavior has one factor: long range tasks

- Time on task has one factor: time on task

When running a path analysis it is necessary to have one estimate for each parameter so the following two changes were made:

1. Only discovery learning was used as a participant stating that they used the discovery learning method 25% would be also saying that they used the expository teaching method 75%.

2. For the learning processes section which consists of both the deep and surface approach, it was decided to use the formula of deep approach/(deep approach + surface approach) whereby showing that if the value is positive it would mean that the deep approach is being used more than the surface approach and if the value is negative then this would mean that the surface approach was being used more than the deep approach.

As a result Figure 5 shows the initial path analysis of the influence of presage and study processes on academic success.
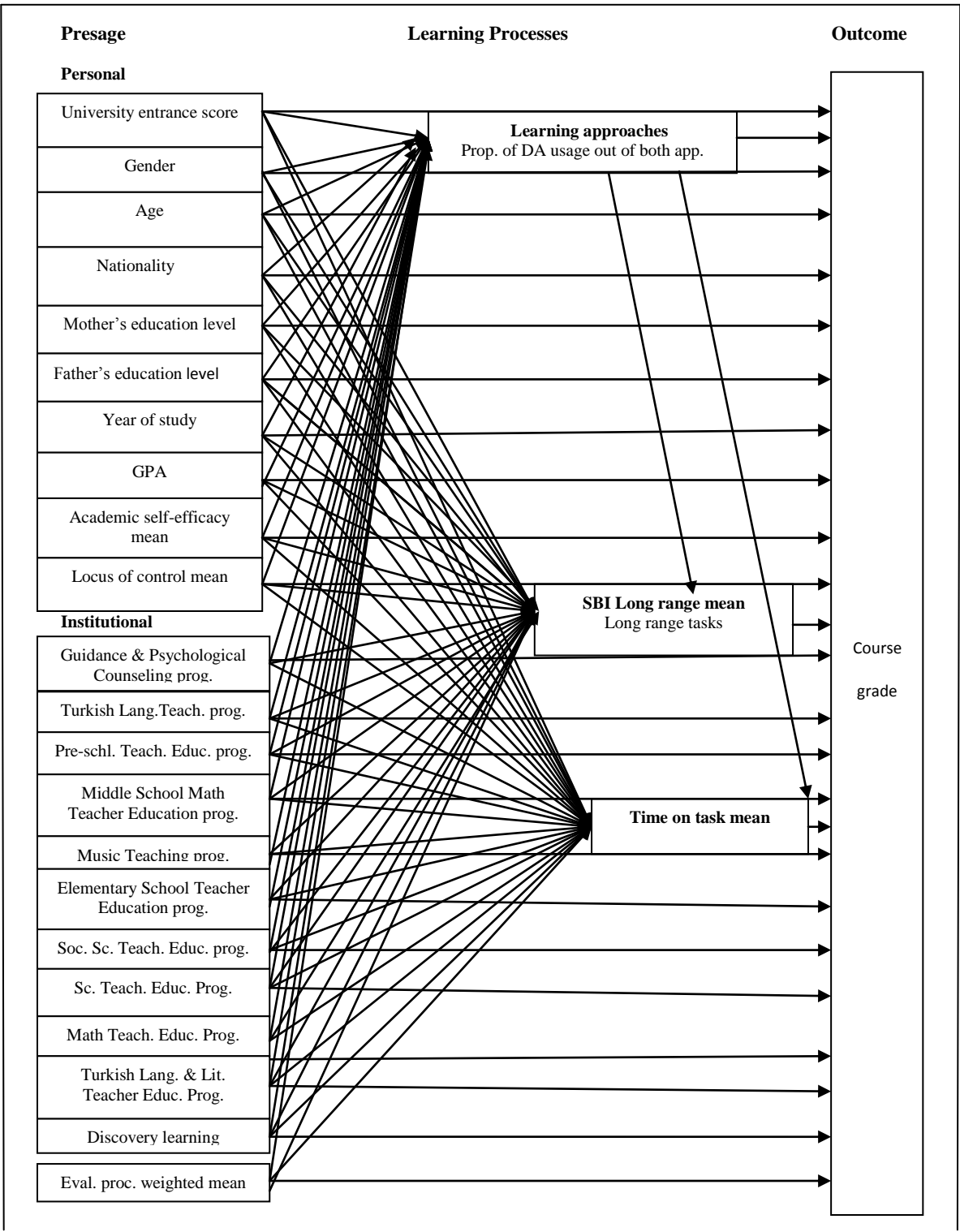
Figure 5. Initial path model of the influence of presage and study processes on academic success

As the initial model has 23 independent and one dependent variable, it was decided to trim these down by conducting correlation analysis to ascertain which factors were more likely to be part of the path analysis model.

3.9 Correlation

Correlation was conducted using the SPSS (version 18.00) program and the Pearson product-moment correlation method between the total of twentysix factors (Figure 5). The aim was to find the correlation coefficients which show significant relationships between factors so that these can be used in the Path analysis. The correlation coefficients range "from -1.0 to +1.0 with ±1.0 indicating a perfect linear relationship, whereas a correlation of 0 indicates no linear relationship" (Groebner et al., 2008 p. 623). The correlations significant at 0.01 level, shown with **, and at 0.05 level, shown with *, both two tailed for the factor course grade, can be seen in Table 9.

Table 9. *Bivariate correlation analysis results for presage and process factors with respect to course grade*

	N	R	P
University entrance score	824	.113*	.001
Gender	829	.143**	.000
Nationality	829	-.076*	.030
Year of study	829	.227**	.000
Present GPA	829	.467**	.000
Academic self-efficacy mean	829	.084*	.016
Guidance & Psychological Counseling program	829	.100**	.004
Middle School Math Teacher Education program	829	-.132**	.000
Social Sciences Teacher Education program	829	-.087*	.013
Evaluation procedure weighted mean	829	-.079*	.023
SBI long range mean	829	.111**	.001
Time on task mean	829	-.071*	.040

** Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

As we can see from Table 9, the Pearson moment-product correlation coefficients of university entrance score r(824)=.113, p=.00,Gender r(829)=.143, p=.00, year of study

r(829)=.227, p=.00, present GPA r(829)=.467, p=.00, academic self-efficacy mean r(829)=.084, p=.01, Guidance and Pschyological Counseling program r(829)=.100, p=.00, and SBI long range mean r(829)=.111, p=00 and course grade have a significant positive relationship, and nationality r(829)=-.076, p=.03, Middle School Math Teacher Education program r(829)=-.132, p=00, Social Sciences Teacher Education program r(829)=-.087, p=01, evaluation procedure weighted mean r(829)=-.079, p=02, time on task mean r(829)=-.071, p=04 and course grade have a significant negative relationship.

The correlations significant at 0.01 level shown with ** and at 0.05 level shown with * , both two tailed for the variable proportion of deep approach usage out of both approaches can be seen in Table 10.

Table 10. *Bivariate correlation analysis results for presage and process factors with respect to proportion of deep approach usage out of both approaches*

	N	R	P
University entrance score	824	-.106**	.002
Mother's education level	829	-.100**	.004
Year of study	829	-.314**	.000
Present GPA	829	-.086**	.013
Academic self-efficacy mean	829	.276**	.000
Locus of control mean	829	-.163**	.000
Guidance & Psychological Counseling program	829	-.285**	.000
Turkish Language Teaching program	829	.085*	.015
Middle School Math Teacher Education program	829	.098**	.005
Elementary School Teacher Education program	829	.091**	.009
Discovery learning	829	.240**	.000
SBI Long range mean	829	.478**	.000
Time on task mean	829	.516**	.000

** Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

As we can see from Table 10, the Pearson moment-product correlation coefficients of academic self-efficacy Mean r(829)= .276, p=.00, Turkish Language Teaching program, r(829)=.085, p=.01, Middle School Math Teacher Education program, r(829)= .098,

p=.00, Elementary School Teacher Education program, r(829)=.091, p=.00, discovery

learning r(829)=.240, p=00, SBI long range mean r(829)=.478, p=00, and time on task

mean r(829)=.516, p=00 have a significant positive relationship, and university entrance

score r(824)=-.106, p=.00, mother's education level r(829)=-.100, p=.00, year of study

r(829)= -.314, p=.00, present GPA r(829)=-.086, p=.01, locus of control mean r(829)=-

.63, p=.00, and Guidance and Psychological Counseling program r(829)= -.285, p=.00,

have a significant negative relationship with proportion of deep approach usage out of

both approaches.

The correlations significant at 0.01 level shown with ** and at 0.05 level shown with * ,

both two tailed for the SBI long range tasks factor can be seen in Table 11.

Table 11. *Bivariate correlation analysis results for presage, process and product factors with respect to SBI long range mean*

	N	R	P
Gender	829	.149**	.000
Nationality	829	-.183**	.000
University entrance score	824	-.140**	.000
Year of Study	829	-.205**	.000
Academic self-efficacy mean	829	.335**	.000
Guidance & Psychological Counseling program	829	-.150**	.000
Turkish Language Teaching department	829	.083**	.017
Pre-school Teacher Education department	829	.078**	.024
Middle School Math Teacher Education program	829	.095**	.006
Elementary School Teacher Education program	829	.142**	.000
Social Sciences Teacher Education program	829	-.258**	.000
Evaluation procedures weighted mean	829	.097**	.005
Proportion of deep approach usage out of both approaches	829	.478**	.000
Time on task mean	829	.302**	.000
Course grade	829	.111**	.001

** Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

As we can see from Table 11, the Pearson moment-product correlation coefficients of

gender r(829)=.149, p=.00, academic self-efficacy mean r(829)=.335, p=.00, Turkish

Language Teaching program r(829)=.083, p=.01, Pre-school Teacher Education program r(829)=.078, p=.02, Middle School Math Teacher Education program r(829)=.095, p=.00, Elementary School Teacher Education program r(829)=.142, p=00, evaluation procedures weighted mean r(829)=.097, p=.00, proportion of deep approach usage out of both approaches r(829)=.478, p=.00, time on task mean r(829)=.302, p=.00, and course grade r(829)=.111, p=.00 have a significant positive relationship, and nationality r(829)=-.183, p=.00, university entrance score r(829)=-.140, p=.00, year of study r(829)=-.205, p=.00, Guidance and Psychological Counseling program r(829)=-.150, p=.00, and Social Sciences Teacher Education program r(829)=-.258, p=.00 have a significant negative relationship with SBI long range mean.

The correlations significant at 0.01 level shown with ** and at 0.05 level shown with * , both two tailed for the time on task mean variable can be seen in Table 12.

Table 12. *Bivariate correlation analysis results for presage, process and product factors with respect to time on task mean*

	N	R	P
Age	829	.082*	.018
Year of study	829	-.205**	.000
Academic self-efficacy mean	829	.174**	.000
Locus of control mean	829	-.143**	.000
Course grade	829	-.071*	.040
Guidance & Psychological Counseling program	829	-.245**	.000
Music Teaching program	829	.079*	.024
Social Sciences Teacher Education program	829	.194**	.000
Discovery learning	829	.179**	.000
Proportion of deep approach usage out of both approaches	829	.516**	.000
SBI long range mean	829	.302**	.000

** Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

As we can see from Table 12, the Pearson moment-product correlation coefficients of age r(829)=.082, p=.01, academic self-efficacy mean r(829)=.174, p=.00, Music

Teaching program r(829)=.079, p=.02, Social Sciences Teacher Education program r(829)=.194, p=.00, discovery learning r(829)=.179, p=.00, proportion of deep approach usage out of both approaches r(829)=.516, p=.00, and SBI long range mean r(829)=.302, p=.00 have a significant positive relationship, and year of study r(829)=-.205, p=.00, locus of control mean r(829)=-.143, p=.00, p=.00, course grade r(829)=-.071, p=.04, and Guidance & Psychological Counseling program r(829)=-.245, p=.00 have a significant negative relationship with time on task mean.

From the correlation analysis, the following path analysis model emerged (Figure 6).
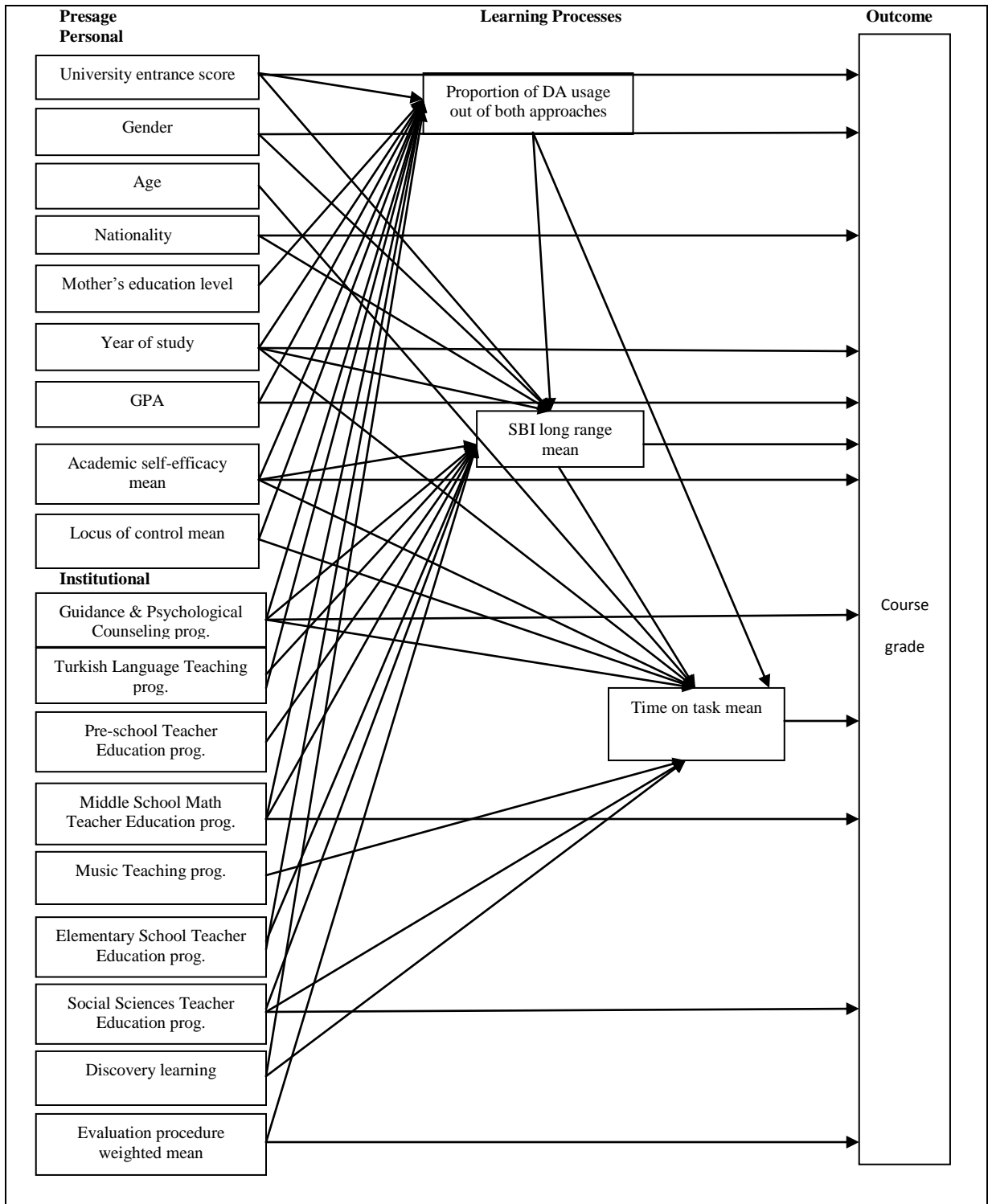
Figure 6. Path model on influence of presage and study processes on academic
success based on correlation analysis

The factors used under the headings presage and personal of the path analysis model, all of which are exogenous variables, were: university entrance score, gender, age, nationality, mother's education level, year of study, present GPA, academic self-efficacy mean, and locus of control mean. The factors used under presage and ınstitutional of the path analysis model, all of which are exogenous variables, were: Guidance & Psychological Counseling program, Turkish Language Teaching program, Pre-school Teacher Education program, Turkish Language Teaching program, Pre-school Teacher Education program, Middle School Math Teacher Education program, Music Teaching Program, Elementary School Teacher Education program, Social Sciences Teacher Education program, discovery learning and evaluation procedure weighted mean. The mediating exogenous variables used under the learning processes section of the path analysis model were proportion of deep approach usage out of both approaches which accounts for both the surface and deep approach mean ratios, Study Behavior Inventory (SBI) long range task mean, and time on task mean. The endogenous variable used for the outcome is the course grade. As a result of the correlation analysis it was found that there were high significant correlations between the learning process mediating exogenous variables: two paths from proportion of deep approach usage out of both approaches leading to SBI long range mean and time on task mean, and one path from SBI long range mean to time on task mean. These paths seem logical as in the proportion of deep approach usage out of both approaches, it is the students' intention on how to go about learning that is being measured which leads to their study behavior followed by how much time they spend on the study behavior tasks. Although the proportion of deep approach usage out of both approaches does not directly lead to academic success (course grade), both paths that lead from it to SBI long range mean and time on task

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mean do have direct paths to academic success. Therefore these aforementioned paths between the learning processes mediating exogenous variables will be included in the path model and analysis.

3.10 Path Analysis

Using AMOS version 18.00 a path analysis was conducted and the following were obtained for the initial Path Analysis Model (Figure 7).

The model was found to be recursive i.e. all the paths are unidirectional (Kline, 2005).
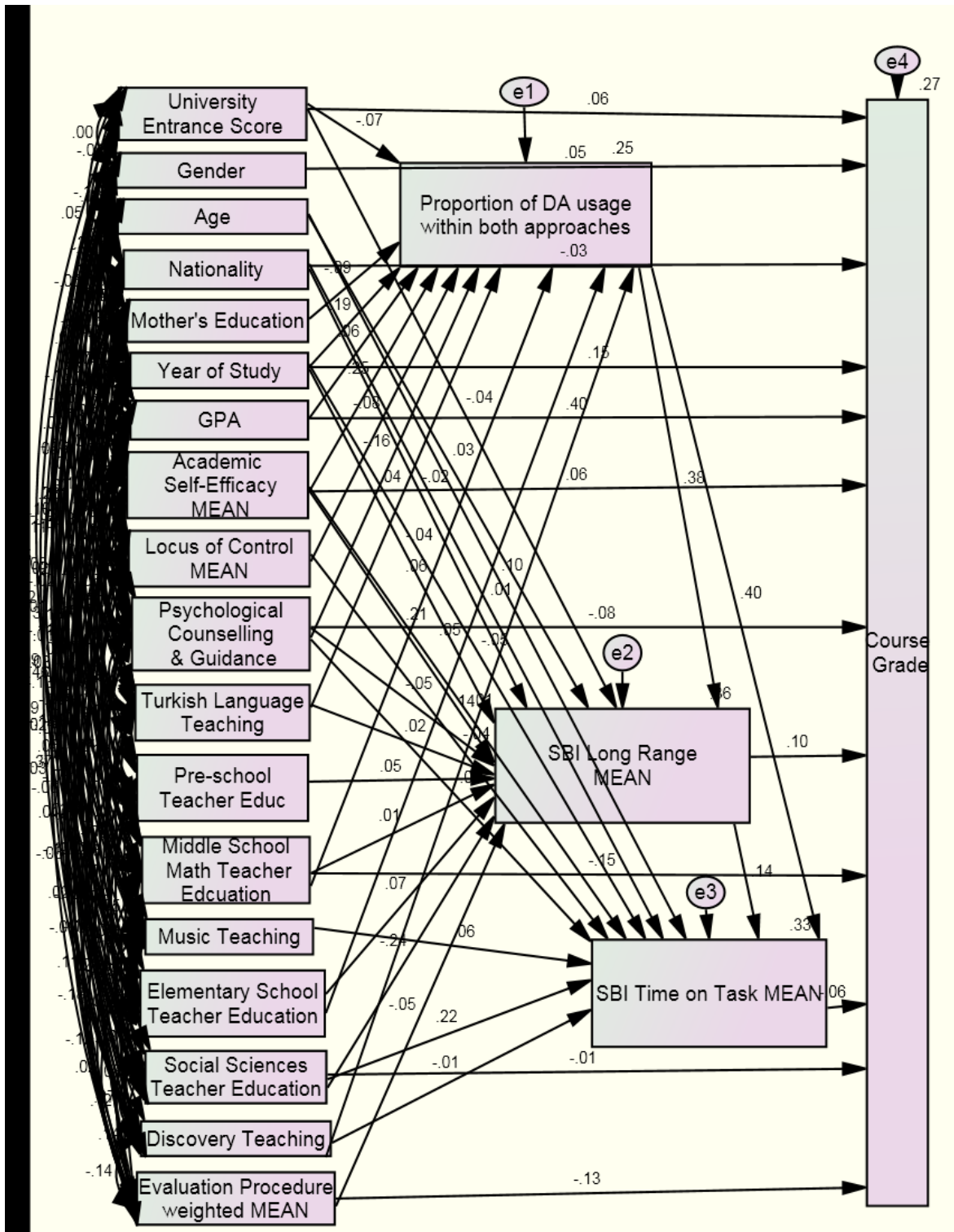
Figure 7. Path model of the influence of presage and study processes on academic success created based on correlation analysis

The sample size was found to be 829. According to recommendations offered by the literature on sample size and path models, a ratio of 20:1 free parameters (variables) is considered to be adequate (Kline, 2005). Our model has 21 parameters which brings the minimum sample size to 420, thus making our sample size of 829 to be more than adequate.

There is an array of goodness-of-fit measures used to test the fit of the model. No specific single index is preferred to another – three or four indices showing an acceptable goodness-of-fit of the model is generally what is required (Dugard, Todman, & Staines, 2010). Of the most popular and commonly reported are the Chi-sqaure statistic but this is stated to be sample sensitive (Arbuckle, 2007; Kahn, 2006; Kyle, 1999) so the Chi-square divided by the degrees of freedom given as CMIN/DF statistic is prefered to be used. The model would be considered an excellent fit if the ratio is below 2.00, considered as acceptable if it is between 3.00 and 5.00 but not acceptable if it is larger than 5.00 (Jackson, Dezee, Douglas, & Shimeall, 2005).

Another popular and commonly reported measure of goodness-of-fit is the Bentler-Bonett Normed Fit Index (NFI) and the Bentler Comparative Fit Index (CFI). These indexes compare the model with a null model (which is assumed to have no correlating variables). The index value eg. .70 , coincides with the percentage (70%) that this model is better than the null model (Jackson et al., 2005). A well-fitting model needs to have CFI and NFI values of over 0.9 preferably .95 (East Carolina university, 1988; Jackson et al., 2005).

The Root Mean Square Error of Approximation (RMSEA) introduced by Steiger & Lind in 1980 (Albright & Park, 2009), another popular and commonly reported measure, is said to be a good fit if it is 0.06 or lower (Kahn, 2006) or even 0.05 or lower (Kyle, 1999). PCLOSE which stands for the P value of a close fit, needs to have a P value greater than .50 (Hiers et al., 2007).

The Model Fit Summary shows the CMIN/DF to be 3.462 which is considered as acceptable, the CFI to be .982, and the NFI to be .976 which are also both considered as an acceptable fit. The RMSEA was found to be .055 which is over the acceptable .05 cutoff and the PCLOSE to be .239 which is under the acceptable .5 value.

In order to improve the model, the regression weights and significance levels were examined and the paths with the least significant p values were trimmed one by one, checking the model summary results after every removal of a path until the p value reached .05 (Gaskin, 2011; Munro, 1981). Table 13 shows the paths removed according to the p values and the Model Fit Summary as a result of the removal.

Table 13. *Model Fit Summary results due to removal of least significant p values*

P value	Paths removed due to high p values	Model Fit Summary as a result of removal of least significant p values				
		CMIN/DF	NFI	CFI	RMSEA	PCLOSE
	Values for initial model	3.462	.976	.982	.055	.239
.830	SBI long range mean & Middle School Math Teacher Education program (A5)	3.355	.976	.982	.053	.294
.821	SBI time on task & discovery learning	3.255	.976	.982	.052	.353
.802	Course grade & Social Sciences Teacher Education program (AE)	3.161	.976	.983	.051	.415
.793	SBI long range mean & Turkish Language Teaching program (A3)	3.073	.976	.983	.050	.478
.783	SBI time on task mean & nationality	2.989	.976	.983	.049	.541
.757	SBI time on task & academic self-efficacy mean	2.911	.976	.983	.048	.601
.524	SBI long range mean & nationality	2.845	.976	.983	.047	.653
.350	Proportion of deep approach usage out of both approaches & Turkish Language Teaching program (A3)	2.795	.976	.983	.047	.692
.284	SBI long range mean & age	2.753	.975	.983	.046	.725
.283	SBI long range mean & year of study	2.714	.975	.983	.045	.755
.218	Course grade & nationality	2.685	.975	.983	.045	.777
.214	SBI time on task mean & Guidance and Psychological Counseling program (A2)	2.658	.974	.983	.045	.797
.175	Proportion of deep approach usage out of both approaches & Elementary School Teacher Education program (AD)	2.640	.974	.983	.044	.811
.174	Course grade & gender	2.621	.974	.983	.044	.825
.144	Proportion of deep approach usage out of both approaches & Middle School Math Teacher Education program (A5)	2.610	.973	.982	.044	.834
.117	Time on task & locus of control mean	2.607	.972	.982	.044	.839
.107	Proportion of deep approach usage out of both approaches & present GPA	2.607	.972	.982	.044	.842
.095	SBI long range mean & Pre-school Teacher Education program (A4)	2.610	.971	.981	.044	.843
.087	Course grade & academic self-efficacy mean	2.616	.971	.981	.044	.842

P value	Paths removed due to high p values	Model Fit Summary as a result of removal of least significant p values				
		CMIN/DF	NFI	CFI	RMSEA	PCLOSE
	Values for initial model	3.462	.976	.982	.055	.239
.066	Course grade & university entrance score	2.631	.970	.980	.044	.836
.057	SBI long range mean & Elementary School Teacher Education program (AD)	2.650	.969	.980	.045	.827
.058	SBI long range mean & evaluation procedure weighted mean	2.668	.968	.979	.045	.818

On removing the fifteen paths from the initial model the following results were achieved: The model was found to be recursive with a sample size of 829. The Model Fit Summary showed the CMIN/DF to drop to 2.668 from 3.462 which is a much more acceptable fit, the CFI to drop slightly to .979 from .982, and the NFI to drop slightly to .968 from .976, both of which are above the .95 preferred accepted value. The RMSEA was found to drop to .045 from .055 which is lower than the accepted .05 cut off level and the PCLOSE was found to rise to .818 from .239 altogether showing this model to be a very good fit.

The final model seen in Figure 8 includes 16 exogenous variables, university entrance score, age, mothers' education level, year of study, present GPA, academic self-efficacy mean, locus of control mean, Guidance and Psychological Counseling program, Middle School Math Teacher Education program, Music Teaching program, Social Sciences Teacher Education program, Social Sciences Teacher Education program, discovery learning, evaluation procedure weighted mean, proportion of deep approach usage out of both approaches, SBI long range mean, and time on task mean. The final three variables listed are mediating variables; proportion of deep approach usage out of both approaches being a mediator for SBI long range mean and time on task whereby both have a path

leading to course grade. There are a total of seven factors which have direct paths to course grade. These are year of study, present GPA, Guidance and Psychological Counseling program, Middle School Math Teacher Education program, evaluation procedures weighted mean, SBI long range mean and time on task mean. The final two being mediating factors.
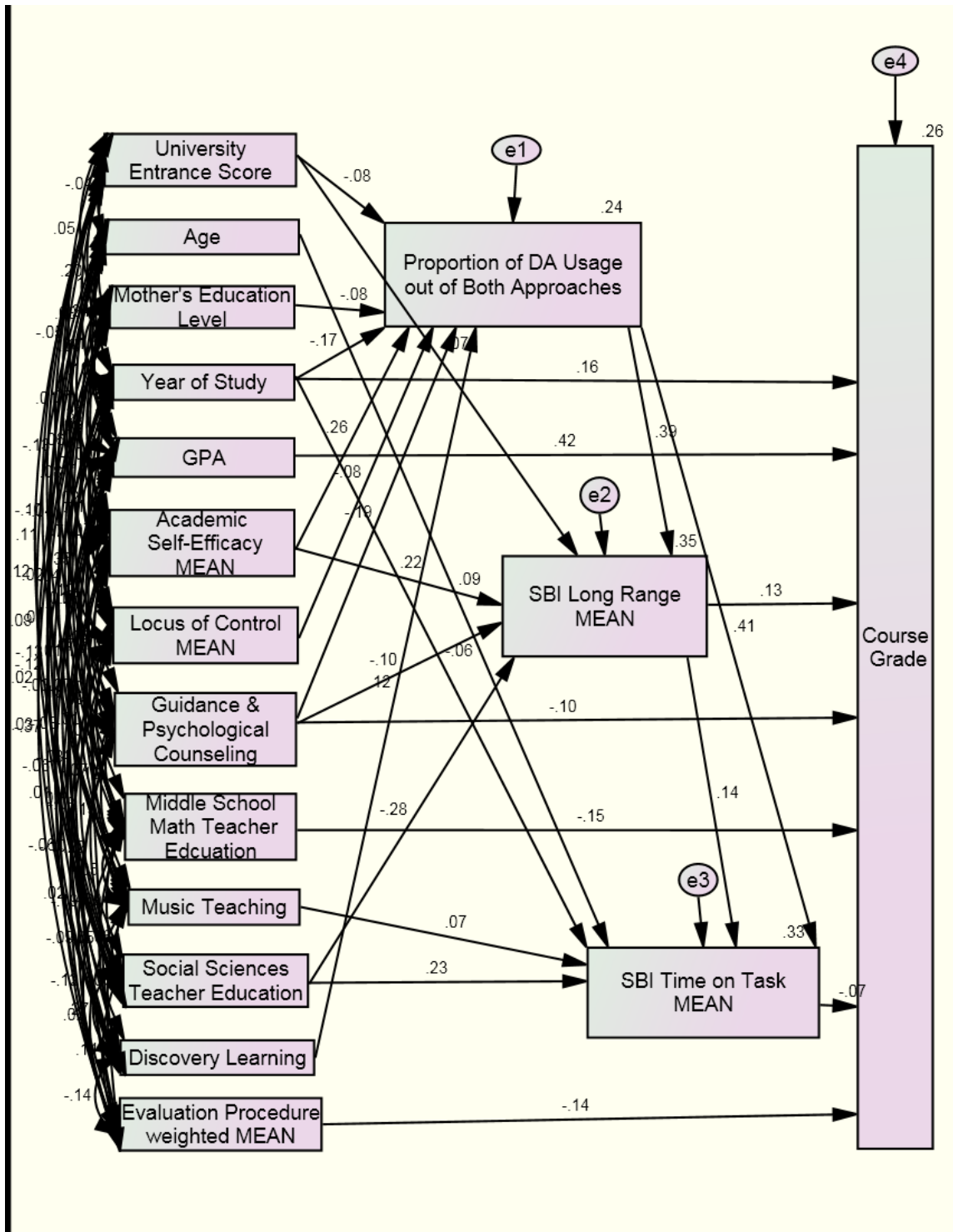
Figure 8. Final path analysis model

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3.11 Collinearity Results

SPSS version 18.00 was used to detect any multicollinearity problems, shown as Variance Inflation Factors (VIF) within the remaining factors in the final path analysis. Multicollinearity occurs when there is "a high correlation between two independent variables such that the two variables contribute redundant information to the model" (p.695), and should be < 5 for each variable for it not to present a problem (Groebner, 2008). Four regression analyses were conducted first with dependent variable as course grade, second with the dependent variable as proportion of deep approach usage out of both approaches, third with the dependent variable as SBI long range mean, and fourth with the dependent variable time on task mean. All four collinearity analyses showed all the VIF values to be under 5 and therefore shows that there are no multicollinearity problems (Groebner, 2008).

3.12 Analysis of the results

For the analysis, Maximum Likelihood (ML) Estimates method was used. This produces unstandardized and standardized regression weights estimates. Unstandardized estimates show how much the dependent variable changes when the predictor variable changes by one unit (Kline, 2005; Mwetulundila, 2001). The variances of the variables in standardized estimates equal 1.0 (Kline, 2005) and show how much the dependent variable changes based on every 1.0 change in the predictor variable's standard deviation (Olobatuyi, 2006). The standardized estimates can indicate the size of the effect of the path coefficients. Kline's (2005) recommendations for values indicating small and large direct effects are based on J. Cohen's (1988) suggestions in the field of social sciences. These are: path coefficient values less than .10 show a small effect,

those in the region of .30 show a medium effect and those which are around .50 and above show a large effect (Kline, 2005).

For the indirect effect values Kenny (2011) suggests that the values should be squared or denoted as 'rr' as this effect is derived from two effects thus .01 would show a small effect, .09 a medium and .25 a large effect. Based on this logic, if the indirect effect values are derived from three effects then the values should be denoted as 'rrr' thus .001 would show a small effect, .027 a medium, and .125 a large effect. If the indirect effect values are derived from four effects then the values would be denoted as 'rrrr' thus .0001 would show a small effect, .0081 a medium effect, and .0625 a large effect.

When interpreting the results, although unstandardized esimates are usually preferred to be used, they are sometimes not easily understood and it proves difficult to see which variable has the more powerful influence, in this case, standardized estimates are used (Jackson et al., 2005). In order for easy interpretation of the results of this study, the standardized estimates will be used with a mention of the unstandardized estimates.

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Table 14. *Maximum Likelihood parameter estimates and significance levels for path model of the influence of presage and study processes on academic achievement*

			Unstandardized estimate	S.E.	C.R.	P	Standardized estimate	Effect
Prop. of DA usage	<---	Mothers' education level	-.007	.003	-2.662	.008	-.081	Small
Prop. of DA usage	<---	LOC mean	-.041	.016	-2.508	.012	-.077	Small
Prop.of DA usage	<---	Discovery learning	.001	.000	3.729	***	.123	Medium
Prop. of DA usage	<---	Guidance & Psychological Counseling program	-.060	.010	-5.777	***	-.192	Medium
Prop. of DA usage	<---	Year of study	-.032	.007	-4.816	***	-.172	Medium
Prop. of DA usage	<---	Self-efficacy mean	.051	.006	8.466	***	.260	Medium
Prop. of DA usage	<---	University entrance score	.000	.000	-2.533	.011	-.081	Small
SBI long range mean	<---	Guidance & Psychological Counseling program	-.185	.054	-3.434	***	-.104	Medium
SBI long range mean	<---	University entrance score	-.001	.001	-2.294	.022	-.066	Small
SBI long range mean	<---	Soc. Sc. Teacher Educ. prog	-.801	.083	-9.630	***	-.279	Medium
SBI long range mean	<---	Self-efficacy mean	.240	.033	7.369	***	.216	Medium
SBI long range mean	<---	Proportion of DA usage out of both approaches	2.220	.175	12.706	***	.392	Medium
SBI time on task mean	<---	Music Teaching program	.236	.099	2.379	.017	.068	Small
SBI time on task mean	<---	Soc. Sc. Teacher Educ. Prog	.504	.066	7.662	***	.232	Medium
SBI time on task mean	<---	Year of study	-.050	.025	-2.021	.043	-.063	Small
SBI time on task mean	<---	Age	.026	.008	3.196	.001	.094	Small
SBI time on task mean	<---	Proportion of DA usage out of both approaches	1.774	.147	12.091	***	.414	Medium
SBI time on task mean	<---	SBI long range mean	.108	.026	4.191	***	.142	Small
Course grade	<---	Middle School Math Teacher Education program	-1.084	.225	-4.828	***	-.150	Medium
Course grade	<---	Weighted evaluation mean	-.354	.081	-4.348	***	-.139	Medium
Course grade	<---	Year of study	.394	.086	4.586	***	.163	Medium
Course grade	<---	GPA	1.256	.098	12.852	***	.416	Medium
Course grade	<---	SBI long range mean	.295	.072	4.107	***	.130	Medium
Course grade	<---	Guidance & Psychological Counseling prog.	-.403	.137	-2.932	.003	-.100	Small
Course grade	<---	SBI time on task mean	-.212	.096	-2.209	.027	-.071	Small

Table 14 presents the paths that influence each other, in the form of unstandardized estimates, standardized estimates, standard errors (S.E.), and the critical ratios (C.R.) which are a result of the estimates divided by the standard errors.

The following chapter will give inforation regarding the findings of the study.

Chapter 4

STUDY FINDINGS

In this chapter information on the findings from the data collected in this study will be given.

4.1 Findings According to the First Research Question

The answer to the first research question 'How do presage (personal and institutional) factors relate to learning approaches, study behavior, and time on task?' was investigated.

The data collected were analyzed using the path analysis method.

4.1.1 Direct Effect of Presage Factors on Learning Approaches

The factor representing learning approaches in the final model is 'proportion of deep approach usage out of both approaches'. There are seven direct effects of personal and institutional factors on proportion of deep approach usage out of both approaches. These figures can be seen in Table 15.

Table 15. *Direct effects on proportion of deep approach usage out of both approaches,*
SBI long range mean, time on task and course grade

Factors	Prop. DA usage	Long range task	Time on task	Course grade
University entrance score	-.081	-.066	-	-
Age	-	-	.094	-
Mother's education level	-.081	-	-	-
Year of study	-.172	-	-.063	.163
GPA	-	-	-	.416
Academic self-efficacy mean	.260	.22	-	-
Locus of control mean	-.077	-	-	-
Guidance & Psych. Counseling prog.	-.192	-.104	-	-.100
Middle Schl. Math Teacher Educ. prog.	-	-	-	-.150
Music Teaching prog.	-	-	.068	-
Social Sciences Teacher Education prog.	-	-.28	.232	-
Discovery learning	.123	-	-	-
Evaluation procedure weighted mean	-	-	-	-.139
Prop. of DA usage out of both approaches	-	.392	.414	-
SBI long range tasks	-	-	.142	.130
Time on task	-	-	-	-.071

The proportion of deep approach usage out of both approaches receives a direct inverse effect of -.081 standard deviation decrease for each standard deviation unit increase in university entrance score which is considered a small effect (Kline, 2005). This shows that the higher the students' university entrance score the less they are likely to use the deep approach and more likely to use the surface approach when studying and visa versa.

The proportion of deep approach usage out of both approaches receives a direct inverse effect of -.081 standard deviation decrease for each standard deviation unit increase in mother's education level which is considered a small effect (Kline, 2005). This shows that the higher the students' mother's education level the less they are likely to use the deep approach and more likely to use the surface approach when studying and visa versa.

The proportion of deep approach usage out of both approaches receives a direct inverse effect of -.172 standard deviation decrease for each standard deviation unit increase in year of study which is considered a small to medium effect (Kline, 2005). This shows that the higher the students' year of study the less they are likely to use the deep approach and more likely to use the surface approach when studying.

The proportion of deep approach usage out of both approaches receives a direct positive .260 standard deviation increase for each standard deviation unit increase in academic self-efficacy mean which is considered a medium effect (Kline, 2005). This shows that the higher the students' academic self-efficacy, the more likely they will use the deep approach than the surface approach when studying.

The proportion of deep approach usage out of both approaches receives a direct inverse effect of -.077 standard deviation decrease for each standard deviation unit increase in locus of control mean which is considered a small effect (Kline, 2005). This shows that the more 'external' locus of control the students have, the more likely they will be to use the surface approach when studying and visa versa where students with more 'internal' locus of control will more likely use the deep approach when studying.

The proportion of deep approach usage out of both approaches receives a direct inverse effect of -.192 standard deviation decrease for each standard deviation unit increase in Guidance & Psychological Counseling program which is considered to be a small to medium effect (Kline, 2005). This shows that the students studying in the Guidance and

Psychological Counseling program are less likely to use the deep approach and more likely to use the surface approach when studying than the other programs.

The proportion of deep approach usage out of both approaches receives a direct positive .123 standard deviation increase for each standard deviation unit increase in discovery learning which is considered a small effect (Kline, 2005). This shows that when the discovery learning method is used, the students are more likely to use the deep approach than the surface approach.

4.1.2 Direct Effect of Presage Factors on Study Behavior

The factor representing study behavior in the final model is 'SBI long range task'. There are five direct paths from the personal and institutional factors to SBI long range task mean factor. These figures can be seen in Table 15 (p. 132).

The SBI long range task mean receives a direct inverse -.066 standard deviation decrease for each standard deviation unit increase in university entrance score which is considered a small effect (Kline, 2005). This shows that the higher the students' university entrance score the less likely they will carry out long range tasks based on the items in Table 16 (p. 135) when studying for the course chosen for administration.

The SBI long range task mean receives a direct positive .216 standard deviation increase for each standard deviation unit increase in academic self-efficacy mean which is considered a small to medium effect (Kline, 2005). This shows that the higher the students' academic self-efficacy the more likely they will carry out long range tasks

based on the items in Table 16 (p. 135) when studying for the course chosen for administration.

The SBI long range task mean receives a direct inverse -.104 and -.279 standard deviation decrease for each standard deviation unit increase in Guidance and Psychological Counseling program and Social Sciences Teacher Education program respectively. This shows that the students in these programs are less likely to carry out long range tasks when studying for the course chosen for administration than the other programs and more so the Social Sciences Teacher Education program students.

The SBI long range task mean receives a direct positive .392 standard deviation increase for each standard deviation unit increase in proportion of deep approach usage out of both approaches which is considered a medium and almost large effect (Kline, 2005). This shows that the more the students use the deep approach the more likely they will carry out long range tasks based on the items in Table 15 (p. 132) when studying for the course chosen for administration.

Table 16. *Items referred to by long range tasks*

Item	Long range tasks
Q51.	I try to summarize, classify, and systematize facts learned, associating them with previously learned materials and facts.
Q61.	I keep all the notes for each subject together carefully arranging them in some logical order.
Q56.	When reading a long textbook assignment, I stop periodically and mentally review the main points that has been presented.
Q38.	If reports, themes, term papers, etc., are given I make certain that I clearly understand what is wanted before I begin to work.
Q59.	After a class lecture, I go back and recite to myself the material in my notes – rechecking points I found doubtful.

4.1.3 Direct Effect of Presage Factors on Time on Task

There are six direct paths from the personal and institutional factors to the time on task mean factor. These figures can be seen in Table 15 (p. 132).

Time on task mean receives a direct positive .094 standard deviation increase for each standard deviation unit increase in age which is considered a small effect (Kline, 2005). This shows that the older the students are, the more likely they will spend further time on the tasks shown via the items in Table 17 (p. 137) when studying for the course chosen for administration.

Time on task mean receives a direct inverse -.063 standard deviation decrease for each standard deviation unit increase in year of study which is considered a small effect (Kline, 2005). This shows that the higher the students' year of study, the less time they will spend on the tasks shown via the items in Table 17 (p. 137) when studying for the course chosen for administration.

Time on task mean receives a direct positive .068 and .232 standard deviation increase for each standard deviation unit increase in Music Teaching program and Social Sciences Teacher Education program which is considered a small effect and small to medium effect respectively (Kline, 2005). This shows that the students in these departmens (more so the students in the Social Sciences Teacher Education program) are more likely to spend more time on the tasks shown via the items on Table 17 (p. 137) when studying for the course chosen for administration.

Time on task mean receives a direct positive .414 standard deviation increase for each standard deviation unit increase in proportion of deep approach usage out of both approaches which is considered a medium effect (Kline, 2005). This shows that the more the student uses the deep approach, the more time they will spend on the tasks shown via the items in Table 17 when studying for the course chosen for administration.

Time on task mean receives a direct positive .142 standard deviation increase for each standard deviation unit increase in SBI long range mean which is considered a small effect (Kline, 2005). This shows that the more the student carries out the long range tasks presented in Table 16 (p. 135) the more time they will spend on them when studying for the course chosen for administration.

Table 17. *Time on task items*

Item	Long range tasks
Q52.	How many hours a week do you try to summarize, classify, and systematize facts that you learned, associating them with previously learned materials and facts?
Q60.	How many hours a week do you after a class lecture, go back and recite to yourself the material in your notes – rechecking points you found doubtful?
Q57.	When reading a long textbook assignment, how many hours a week do you stop periodically and mentally review the main points that have been presented?
Q63.	Before attending class, how many hours a week do you prepare by reading or studying the assignment?
Answer key	A – I never do this B – I do this maximum 2 hours a week C – I do this between 3 – 7 hours a week D – I do this between 8 – 7 hours a week E – I do this more than 16 hours a week

It is interesting to note that all but one item (item no. 63) are to do with the same items in the long range task factor. So, the path leading from SBI long range task to time on

task is a logical one in that the student spends a certain amount of time carrying out these long range tasks.

4.2 Analysis According to the Second Research Question

The answer to the second research question 'How well do learning processes (learning approaches, study behaviors and time on task) predict academic success controlling for personal and institutional factors?' was investigated.

The data collected were analyzed using the path analysis method.

Seven direct effects of leaning processes and presage (personal and institutional) factors were found on course grade.

4.2.1 Direct Effect of Personal Factors on Course Grade

There are two direct effects of personal factors on course grade. These figures can be seen in Table 15 (p. 132).

Course grade receives a direct positive effect of .163 standard deviation increase for each standard deviation unit increase in year of study which is considered a small to medium effect (Kline, 2005). This shows that the higher the students' year of study, the higher the course grade they received for the course chosen for administration.

Course grade receives a direct positive effect of .416 standard deviation increase for each standard deviation unit increase in present GPA which is considered a medium effect (Kline, 2005). This shows that the higher the students' present GPA, the higher the course grade they received for the course chosen for administration.

4.2.2 Direct Effect of Institutional Factors on Course Grade

There are three direct effects of institutional factors on course grade. These figures can be seen in Table 15 (p. 132).

Course grade receives direct inverse effects of -.100 and -.150 standard deviation decrease for each standard deviation unit increase in Guidance and Psychological Counseling program and Middle School Math Teacher Education program respectively, which is considered a small effect (Kline, 2005) for the Guidance and Psychological Counseling program and a small to medium effect for the Middle School Math Teacher Education program. This shows that the students enrolled in these programs achieved a lower course grade for the course chosen for administration than the students in the other programs.

Course grade receives a direct inverse effect of -.139 standard deviation decrease for each standard deviation unit increase in evaluation procedures weighted mean which is considered a small effect (Kline, 2005). This shows that the higher the cognitive learning levels, such as analysis, synthesis and evaluation, depicted for the evaluation procedures and weights assigned for each component of the grade (eg. homework, project, midterm exam, final exam etc.), the lower the course grade that was achieved for the course chosen for administration.

4.2.3 Direct Effect of Learning Processes on Course Grade

There are two direct effects of learning processes on course grade. These figures can be seen in Table 15 (p. 132).

Course grade receives a direct positive effect of .130 standard deviation increase for each standard deviation unit increase in SBI long range mean which is considered a small effect (Kline, 2005). This shows that the more the student carries out the long range tasks presented in Table 16 (p. 135), the higher the course grade they received for the course chosen for administration.

Course grade receives a direct inverse effect of -.071 standard deviation decrease for each standard deviation unit increase in time on task mean which is considered a small effect (Kline, 2005). This shows that the more time students spend on the tasks shown via the items presented in Table 17 (p. 137) when studying for the course chosen for administration, the lower the course grade they received.

4.2.4 Indirect Effect of Personal Factors on Course Grade

There are twelve indirect paths to course grade. Indirect paths can be calculated by multiplying the coefficients of the paths leading to the final variable (Olobatuyi, 2006). If there is more than one indirect path leading to the same variable, then the multiplied coefficients for each indirect path are added together (Tufiş, 2009). In order to find the total effect, which signifies "the average overall amount of change in the dependent variable for one unit/one standard deviation change in the predictor variable" (Tufiş, 2009, p. 8) then, the direct and indirect effects are added together. These can be seen in the individual tables for the mediating and dependent variables below.

Table 18. *Indirect and total effects of university entrance score on course grade*

Paths	Calculation of paths	
University entrance score →Proportion of DA → **LR mean → Course grade	(-.08)(.39)(.13)	= -.0040
University entrance score →Proportion of DA → ToT mean → Course grade	(-.08)(.41)(-.07)	= +.0022
University entrance score → Proportion of DA → LR mean → *ToT mean → Course grade	(-.08)(.39)(.14)(-.07)	= +.0003
University entrance score → LR mean → Course grade	(-.066)(.13)	= -.0085
University entrance score → LR mean → ToT mean → Course grade	(-.066)(.14)(-.07)	= +.0006
	Total indirect effect	= -.0094
	Total effect	= -.0094

*Long range tasks mean (LR mean)
** Time on task (ToT)

From Table 18 it can be seen that course grade receives an indirect and total inverse effect of -.0094 standard deviation decrease for each standard deviation unit increase in university entrance score which is considered a small effect (Kenny, 2011). This means that the higher the university entrance score received by the student, the lower the course grade they received for the course chosen for administration. The total indirect effect is made up of five indirect paths:

i.   through proportion of deep approach usage out of both approaches and SBI long range tasks which produces an indirect small inverse effect of -.0040 (Kenny, 2011) standard deviation increase in course grade for every unit decrease in university entrance score showing that the lower the student's university entrance score the more likely the student will use the deep approach out of both approaches to studying and carry out the long range tasks shown in Table 16 (p. 135) which will lead to a higher course grade.

ii.   through proportion of deep approach usage out of both approaches and time on task which produces an indirect small positive effect of +.0022 (Kenny, 2011)

standard deviation increase in course grade for every unit increase in university entrance score and visa versa. This shows that the lower the student's university entrance score the more likely the student will use the deep approach out of both approaches to studying and spend more time on the tasks listed in Table 17 but be prone to receiving a lower grade than their classmates in the course chosen for administration.

iii. through proportion of deep approach usage out of both approaches, SBI long range tasks, and time on task which produces an indirect small positive effect of +.0003 (Kenny, 2011) standard deviation increase in course grade for every unit increase in university entrance score and visa versa. This shows that the lower the student's university entrance score the more likely the student will use the deep approach out of both approaches to studying, be more likely to carry out the long range tasks listed in Table 16 (p. 135), spend more time on these tasks but be liable to receive a lower course grade for the course chosen for administration.

iv. through SBI long range tasks producing an indirect small inverse effect of -.0085 (Kenny, 2011) standard deviation increase in course grade for every unit decrease in university entrance score showing that the lower the student's university entrance score the more likely the student will carry out the long range tasks listed in Table 16 (p. 135), and achieve a higher course grade.

v. through SBI long range tasks, and time on task producing an indirect small positive effect of +.0006 (Kenny, 2011) standard deviation increase in course

grade for every unit increase in university entrance score and vise versa. This path shows that the lower the student's university entrance score the more likely the student will carry out the long range tasks listed in Table 16 (p. 135), spend more time on these tasks but be liable to get a low course grade for the course chosen for administration.

Table 19. *Indirect and total effects of age on course grade*

Paths	Calculation of paths	
Age → Time on task mean → Course grade	(.94)(-.07)	= -.007
	Indirect effect	= -.007
	Total effect	= .-007

From Table 19, it can be seen that course grade receives an inverse indirect and total effect of -.007 standard deviation decrease for each standard deviation unit increase in age via time on task mean which is considered a small effect (Kenny, 2011). This shows that the higher the students' age the more time they will spend on the tasks shown via the items in Table 17 (p. 137) when studying for the course chosen for administration but will not necessary receive a higher course grade for doing so.

Table 20. *Indirect and total effects of mother's education level on course grade*

Paths	Calculation of paths	
Mother's education level →Proportion of DA → LR mean → Course grade	(-.08)(.39)(.13)	= -.0040
Mother's education level →Proportion of DA → ToT mean → Course grade	(-.08)(.41)(-.07)	= +.0022
Mother's education level → Proportion of DA → LR mean → ToT mean → Course grade	(-.08)(.39)(.14)(-.07)	= +.0003
	Indirect effect	= -.0015
	Total effect	= -.001

As can be seen in Table 20, course grade receives an indirect and total effect of -.001 standard deviation decrease for each standard deviation unit increase in mother's education level which is considered a small effect (Kenny, 2011). The indirect effect is made up of three indirect paths:

i.   through proportion of deep approach usage out of both approaches and SBI long range tasks producing an indirect small inverse effect of -.0040 (Kenny, 2011) standard deviation increase in course grade for every unit decrease in mothers' education level. This shows that the lower the mother's education level the more likely the student will use the deep approach to studying out of both approaches, carry out the long range tasks listed in Table 16 (p. 135), and achieve a higher course grade than students whose mothers have a higher level of education.

ii.   through proportion of deep approach usage out of both approaches and time on task producing an indirect small positive effect of +.0022 (Kenny, 2011) standard deviation increase in course grade for every unit increase in mothers' education level. This shows that the lower the mother's education level the more likely the student will use the deep approach to studying and spend more time on the tasks listed in Table 17 (p. 137) but be less likely to achieve a high course grade for the course.

iii. through proportion of deep approach usage out of both approaches, SBI long range tasks, and time on task producing an indirect small positive effect of +.0003 (Kenny, 2011) standard deviation increase in course grade for every unit

increase in mothers' education level. This shows that the lower the mother's education level the more likely the student will use the deep approach to studying, carry out the long range tasks listed in Table 16 (p. 135), spend more time on these tasks but be prone to receiving a low course grade for the course chosen for administration.

So, in general, it can be seen that students whose mother have the lower levels of education, are the ones who are more prone to using the deep approach and long range tasks and receiving a higher grade than their counterparts except for those who are also spending more time on these tasks.

Table 21. *Indirect and total effects of year of study on course grade*

Paths	Calculation of paths	
Year of study →Proportion of DA → LR mean → Course grade	(-.17)(.39)(.13)	= -.0086
Year of study →Proportion of DA → ToT mean → Course grade	(-.17)(.41)(-.07)	= +.0048
Year of study → Proportion of DA → LR mean → ToT mean → Course grade	(-.17)(.39)(.14)(-.07)	= +.0006
Year of study →ToT mean → Course grade	(-.063)(-.07)	= +.0044
	Total indirect effect	= +.0008
	Direct effect	= +.163
	Total effect	= +.164

As can be seen in Table 21, course grade receives a positive direct and total effect of .16 standard deviation increase for each standard deviation unit increase in year of study which is considered a small effect (Kline, 2005) showing that the higher the academic year, the higher the course grade for the course chosen for administration. The total indirect effect receives a very small positive effect of .0008 (Kenny, 2011) standard

deviation increase in year of study for a unit standard deviation increase in course grade and is comprised of four paths:

i.   through proportion of deep approach usage out of both approaches and SBI long range tasks producing an indirect small inverse effect of -.0086 (Kenny, 2011) standard deviation decrease in course grade for a unit standard deviation increase in year of study. This shows that the lower the year of study the more likely the student will use the deep approach to studying and carry out the long range tasks listed in Table 16 (p. 135) and achieve a higher course grade than students in higher academic year of study.

ii. through proportion of deep approach usage out of both approaches and time on task producing an indirect small positive effect of +.0048 (Kenny, 2011) standard deviation increase in course grade for a unit standard deviation increase in year of study. This shows that the higher the year of study the less likely the student will use the deep approach to studying and spend less time on the tasks listed in Table 17 (p. 137) and be more likely to achieve a high course grade.

iii. through proportion of deep approach usage out of both approaches, SBI long range tasks, and time on task producing an small positive indirect effect of +.0006 (Kenny, 1011) standard deviation increase in course grade for a unit standard deviation increase in year of study. This shows that the higher the year of study the less likely the student will use the deep approach to studying, less

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likely to carry out the long range tasks listed in Table16, spend little time on these tasks and achieve a high course grade.

iv.   through time on task mean producing a small positive indirect effect of .004 (Kline, 2005) standard deviation increase in course grade for a unit standard deviation increase in year of study. This shows that the higher the students' year of study the less time they will spend on the tasks shown via the items in Table 17 (p. 137) when studying for the course chosen for administration and the higher the course grade they will receive for the course chosen for administration.

So, in general as the total and direct effect show, the higher the year of study, the higher the course grade.

There is, however, an important point to note with this result. The students in the earlier years of their program seem to be using the deep approach and long range tasks more than the students in higher years of study and they are gaining higher grades than their classmates.

Table 22. *Indirect and total effects of academic self-efficacy on course grade*

Paths	Calculation of paths	
Academic self-efficacy →Proportion of DA → LR mean → Course grade	(.26)(.39)(.13)	= +.0131
Academic self-efficacy →Proportion of DA → ToT mean → Course grade	(.26)(.41)(-.07)	= -.0074
Academic self-efficacy → Proportion of DA → LR mean → ToT mean → Course grade	(.26)(.39)(.14)(-.07)	= -.0009
Academic self-efficacy → LR mean → Course grade	(.22)(.13)	= +.0286
Academic self-efficacy → LR mean → ToT mean → Course grade	(.22)(.14)(-.07)	= -.0021
	Total indirect effect	= +.031
	Total effect	= +.031

As can be seen in Table 22 course grade receives a positive total effect of .031 standard deviation increase for each standard deviation unit increase in academic self-efficacy which is considered a small effect (Kline, 2005) showing that the higher the academic self-efficacy of a student, the higher the course grade they received for the course chosen for administration. The indirect effect is comprised of five paths:

i.   through proportion of deep approach usage out of both approaches and SBI long range tasks producing a small positive indirect effect of +.0131 (Kenny, 2011) standard deviation increase in course grade for a unit standard deviation increase in academic self-efficacy. This shows that the higher the students' academic self-efficacy the more likely the student will use the deep approach to studying than the surface approach, carry out the long range tasks listed in Table 16 (p. 135) and they will achieve a higher course grade than students with lower academic self-efficacy.

ii.   through proportion of deep approach usage out of both approaches and time on task producing a small inverse indirect effect of -.0074 (Kenny, 2011) standard

deviation increase in course grade for a unit standard deviation decrease in academic self-efficacy. This shows that the higher the students' academic self-efficacy, the more likely they will use the deep approach to studying out of both approaches and spend more time on the tasks listed in Table 17 (p. 137) but be prone to receiving a low course grade.

iii.   through proportion of deep approach usage out of both approaches, SBI long range tasks, and time on task which produced an indirect small inverse effect of -.0009 (Kenny, 1011) standard deviation increase in course grade for a unit standard deviation decrease in academic self-efficacy. This shows that the higher the students' academic self-efficacy, the more likely they will use the deep approach to studying out of both approaches, be more likely to carry out the long range tasks listed in Table 16 (p. 135), and be more likely to spend more time on these tasks but receive a low course grade.

iv.   through SBI long range tasks producing a small positive indirect effect of +.0286 (Kenny, 2011) standard deviation increase in course grade for every unit increase in students' academic self-efficacy showing that the higher the student's academic self-efficacy, the more likely the student will carry out the long range tasks listed in Table 16 (p. 135), and achieve a higher course grade.

v.   through SBI long range tasks, and time on task producing a small inverse indirect effect of -.0021 (Kenny, 2011) standard deviation decrease in course grade for every unit increase in the students' academic self-efficacy. This path

shows that the higher the students' academic self-efficacy, the more likely the student will carry out the long range tasks listed in Table 16 (p. 13), and be more likely to spend more time on these tasks but be liable to get a low course grade for the course chosen for administration.

So, in general, the higher the students' academic self-efficacy, the higher the course grade they received for the course chosen for administration except for the student using more time on tasks.

Table 23. *Indirect and total effects of locus of control on course grade*

Paths	Calculation of paths	
Locus of control →Proportion of DA → LR mean → Course grade	(-.08)(.39)(.13)	= -.0040
Locus of control →Proportion of DA → ToT mean → Course grade	(-.08)(.41)(-.07)	= +.0022
Locus of control → Proportion of DA → LR mean → ToT mean → Course grade	(-.08)(.39)(.14)(-.07)	= +.0003
	Total indirect effect	= -.001
	Total effect	= -.001

From Table 23, it can be seen that course grade receives an inverse indirect and total effect of -.001 standard deviation decrease for each standard deviation unit increase in locus of control which is considered a small effect (Kline, 2005). This shows that the lower the students' locus of control (meaning they have a higher internal locus of control), the higher the course grade they received for the course chosen for administration. The indirect effect is comprised of three paths:

i.   through proportion of deep approach usage out of both approaches and SBI long range tasks producing a small inverse indirect effect of -.0040 (Kenny, 2011)

standard deviation increase in course grade for a unit standard deviation decrease in locus of control. This shows that the lower the students' locus of control (meaning they have a higher intrinsic locus of control), the more likely the student will use the deep approach to studying, carry out the long range tasks listed in Table 16 (p. 135) and achieve a higher course grade than students with higher locus of control (external locus of control).

ii.   through proportion of deep approach usage out of both approaches and time on task producing a small positive indirect effect of +.0022 (Kenny, 2011) standard deviation increase in course grade for a unit standard deviation increase in locus of control. This shows that the lower the students' locus of control (meaning they have a higher internal locus of control), the more likely they will use the deep approach to studying and spend more time on the tasks listed in Table 17 (p. 137) and receive a low course grade.

iii.   through proportion of deep approach out of both approaches, SBI long range tasks, and time on task producing a small positive indirect effect of +.0003 (Kenny, 1011) standard deviation increase in course grade for a unit standard deviation increase in locus of control. This shows that the lower the students' locus of control (meaning they have a higher internal locus of control), the more likely they will use the deep approach to studying, be more likely to carry out the long range tasks listed in Table 16 (p. 135), and spend less time on these tasks and receive a low course grade.

As can be seen from these results, an internal locus of control is shown to lead to the use of the deep approach more than the surface approach and also to the use of the long range tasks which in return leads to receiving a higher course grade, but the more time is spent on these long range tasks the more apt the student is to get a lower grade.

4.2.5 Indirect Effect of Institutional Factors on Course Grade

Four institutional factors have been found to have an indirect effect on course grade.

Table 24. *Indirect and total effects of Guidance & Psychological Counseling program on course grade*

Paths	Calculation of paths	
Guidance & Psychological Counseling prog.→Proportion of DA → LR mean → Course grade	(-.19)(.39)(.13)	= -.0096
Guidance & Psychological Counseling prog.→Proportion of DA → ToT mean → Course grade	(-.19)(.41)(-.07)	= +.0054
Guidance & Psych. Counseling prog.→ Prop. of DA → LR mean → ToT mean → Course grade	(-.19)(.39)(.14)(-.07)	= +.0007
Guidance & Psychological Counseling prog. → LR mean → Course grade	(-.10)(.13)	= -.0130
Guidance & Psychological Counseling prog. → LR mean → ToT mean → Course grade	(-.10)(.14)(-.07)	= +.0009
	Total indirect effect	= -.0156
	Direct effect	= -.10
	Total effect	= -.116

As can be seen in Table 24, course grade receives an inverse indirect, direct, and total effect of -.0156, -.10, and -.116 standard deviation decrease respectively for each standard deviation unit increase in Guidance and Psychological Counseling program which is considered a small effect (Kline, 2005; Kenny, 2011). This shows that the students studying in this program are getting lower course grades for the course chosen for administration than students in other programs. The indirect effect is made up of five indirect paths:

i. through proportion of deep approach usage out of both approaches and SBI long range tasks which produces an indirect small inverse effect of -.0096 (Kenny, 2011) standard deviation increase in course grade for every unit decrease in Guidance and Psychological Counseling program showing that the students studying in this program are less likely to use the deep approach out of both approaches to studying, less likely to carry out the long range tasks shown in Table 16 (p. 135) and more likely to receive a low course grade for the course chosen for administration.

ii. through proportion of deep approach usage out of both approaches and time on task which produces a small positive indirect effect of +.0054 (Kenny, 2011) standard deviation increase in course grade for every unit increase in Guidance and Psychological Counseling Program. This shows that the students studying in this program are less likely to use the deep approach out of both approaches to studying and likely to spend less time on the tasks listed in Table 17 (p. 137) but be more likely to receive a higher grade for the course chosen for administration.

iii. through proportion of deep approach usage out of both approaches, SBI long range tasks, and time on task which produces a small positive indirect effect of +.0007 (Kenny, 2011) standard deviation increase in course grade for every unit increase in Guidance and Psychological Counseling program. This shows that the students studying in this program will be less likely to use the deep approach out of both approaches to studying, be less likely to carry out the long range tasks listed in Table 16 (p. 135), and be more likely to spend less time on these tasks

but be prone to receiving a higher course grade for the course chosen for administration.

iv.   through SBI long range tasks producing a small inverse and indirect effect of - .0130 (Kline, 2005) standard deviation increase in course grade for every unit decrease in Guidance and Psychological Counseling program showing that the students studying in this program will be less likely to carry out the long range tasks listed in Table 16 (p. 135), and be less likely to receive a high course grade.

v.   through SBI long range tasks, and time on task producing a small positive indirect effect of +.0009 (Kenny, 2011) standard deviation increase in course grade for every unit increase in Guidance and Psychological Counseling program. This path shows that the students studying in this program will be less likely to carry out the long range tasks listed in Table 16 (p. 135), more likely to spend less time on these tasks but be prone to getting a high course grade for the course chosen for administration.

Looking at the table from a general perspective, although very small, it can be seen that the students in this program are using the deep approach less than the surface approach, utilizing less of the long range tasks and receiving a lower grade for the course chosen for administration. Only those who are studying for longer, maybe using the surface approach, are receiving a higher grade for the course chosen for administration.

Table 25. *Indirect and total effects of Music Teaching program on course grade*

Paths	Calculation of paths	
Music Teaching program → Time on task mean → Course grade	(.07)(-.07)	= -.005
	Total and indirect effect	= -.005

From Table 25, it can be seen that course grade receives an inverse indirect and total effect of -.005 standard deviation decrease for each standard deviation unit increase in Music Teaching program which is considered a small effect (Kline, 2005). This shows that the students studying in this program are getting lower course grades for the course chosen for administration than students in other programs. The indirect paths shows that the students studying in the Music Teaching program spend more time on the tasks shown in Table 17 (p. 137) but are liable to receiving a lower course grade for the course chosen for administration than students in other the programs.

Table 26. *Indirect and total effects of Social Sciences Teacher Education program on course grade*

Paths	Calculation of paths	
Social Sciences Teacher Education program → LR mean → Course grade	(-.28)(.13)	= -.0364
Social Sciences Teacher Education program → LR mean → ToT mean → Course grade	(-.28)(.14)(-.07)	= +.0027
Social Sciences Teacher Education program → Time on task mean → Course grade	(.23)(-.07)	= -.0161
	Total indirect effect	= -.0498
	Total effect	= -.050

From Table 26, it can be seen that course grade receives an inverse indirect and total effect of -.0498 and -.050 standard deviation decrease respectively for each standard deviation unit increase in Social Sciences Teacher Education program which is considered a small effect (Kline, 2005; Kenny, 2011). This shows that the students studying in this program are getting a lower course grade for the course chosen for

administration than students in other programs. The indirect effect is made up of three indirect paths:

i. through SBI long range tasks producing a small inverse and indirect effect of -.0364 (Kline, 2005) standard deviation increase in course grade for every unit decrease in Social Sciences Teacher Education program showing that the students studying in this program will be less likely to carry out the long range tasks listed in Table 16 (p. 135), and be less likely to receive a high course grade.

ii. through SBI long range tasks, and time on task producing a small positive indirect effect of +.0027 (Kenny, 2011) standard deviation increase in course grade for every unit increase in Social Sciences Teacher Education program. This path shows that the students studying in this program will be less likely to carry out the long range tasks listed in Table 16 (p. 135), more likely to spend less time on these tasks but be prone to getting a high course grade for the course chosen for administration.

iii. Through time on task producing a small inverse indirect effect of -.0161 standard deviation decrease for each standard deviation unit increase in Social Sciences Teacher Education program which is considered a small effect (Kline, 2005). The indirect paths shows that the students studying in this program spend more time on the tasks shown in Table 17 (p. 137) but are liable to receiving a lower course grade than students in other programs taking the course chosen for administration.

Looking at the table from a general perspective, although very small, it can be seen that the students in this program are using the deep approach less than the surface approach, utilizing less of the long range tasks and receiving a lower course grade for the course chosen for administration. Only those who are studying for longer, maybe using the surface approach, are receiving a higher grade for the course chosen for administration.

Table 27. *Indirect and total effects of discovery learning on course grade*

Paths	Calculation of paths	
Discovery learning→Proportion of DA → LR mean → Course grade	(.123)(.39)(.13)	= +.0062
Discovery learning→Proportion of DA → ToT mean → Course grade	(.123)(.41)(-.07)	= -.0035
Discovery learning→ Proportion of DA → LR Mean → ToT mean → Course grade	(.123)(.39)(.14)(-.07)	= -.0004
	Total indirect effect	= +.0023
	Total effect	= .002

As can be seen in Table 27, course grade receives a positive indirect and total effect of .002 standard deviation increase for each standard deviation unit increase in discovery learning which is considered a small effect (Kenny, 2011) showing that the higher the use of discovery learning, the higher the course grade students will receive for the course chosen for administration. The indirect effect is comprised of three paths:

i.   through proportion of deep approach usage out of both approaches and SBI long range tasks producing a small indirect effect of +.0062 (Kenny, 2011) standard deviation increase in course grade for a unit standard deviation increase in discovery learning. This shows that the more the discovery learning method is used, the more likely the student will use the deep approach to studying and carry

out the long range tasks listed in Table 16 (p. 135) and achieve a higher course grade than when the expository teaching method is used.

ii.   through proportion of deep approach usage out of both approaches and time on task producing a small inverse indirect effect of -.0035 (Kenny, 2011) standard deviation increase in course grade for a unit standard deviation decrease in discovery learning. This shows that the more the discovery learning method is used, the more likely the student will use the deep approach to studying and spend more time on the tasks listed in Table 17 (p. 137) but be prone to receiving a low course grade.

iii.   through proportion of deep approach usage out of both approaches, SBI long range tasks, and time on task which produced a small inverse indirect effect of -.0004 (Kenny, 2011) standard deviation increase in course grade for a unit standard deviation decrease in discovery learning. This shows that the more the discovery learning method is used, the more likely the student will use the deep approach to studying, the more likely they will carry out the long range tasks listed in Table 16 (p. 135), and spend more time on these tasks but receive a low course grade.

The results show that the use of the discovery learning method instills a deep approach to leaning plus the use of the long range tasks and this leads to higher course grade. However when more time is spent on these long range tasks, the student receives lower grades for the course chosen for administration.

4.2.6 Indirect Effect of Learning Processes on Course Grade

The indirect effect of learning processes on course grade, are portrayed in Table 28.

Table 28. *Indirect and total effects of proportion of deep approach usage out of both approaches on course grade*

Paths	Calculation of paths	
Proportion of DA → LR mean → Course grade	(.39)(.13)	= +.0507
Proportion of DA → LR Mean → ToT mean → Course grade	(.39)(.14)(-.07)	= -.0038
Proportion of DA → ToT mean → Course grade	(.41)(-.07)	= -.0287
	Total indirect effect	= +.018
	Total effect	= +.018

As can be seen in Table 28, course grade receives a positive indirect and total effect of .018 standard deviation increase for each standard deviation unit increase in proportion of deep approach usage out of both approaches which is considered a small effect (Kenny, 2011) showing that the more the deep approach is used out of both approaches, the higher the course grade students will receive for the course chosen for administration. The indirect effect is comprised of three paths:

i. through SBI long range tasks producing a small to medium positive indirect effect of +.0507 (Kline, 2005) standard deviation increase in course grade for a unit standard deviation increase in proportion of deep approach usage out of both approaches. This shows that the more the deep approach to studying out of both approaches is used the more the student will be likely to carry out the long range tasks listed in Table 16 (p. 135) and achieve a higher course grade than when the expository teaching method is used.

ii.   through SBI long range mean and time on task producing a small inverse indirect effect of -.0038 (Kenny, 2011) standard deviation increase in course grade for a unit standard deviation decrease in porportion of deep approach out of both approaches. This shows that the more the deep approach is used out of both approaches, the more likely the students will carry out the long range tasks depicted in Table 16 (p. 135) and be more likely to spend more time on the tasks listed in Table 17 (p. 137) but be prone to receiving a low course grade.

iii. through time on task producing a small inverse indirect effect of -.0287 (Kenny, 2011) standard deviation increase in course grade for a unit standard deviation decrease in proportion of deep approach usage out of both approaches. This shows that the more the deep approach out of both approaches is used, the more likely the students will spend more time on the tasks listed in Table 17 (p. 137) but will be liable to receive a low course grade.

Once again, the time on task factor shows that this decreases course grade.

Chapter 5

DISCUSSION AND CONCLUSION

This chapter concludes the study with a summary and discussion of the results presented according to the research questions. This will be followed by implications of the study, limitations and suggestions for further research.

Based on the findings presented in the final model (Figure 8 which can be seen on page 126) the results are discussed according to the research questions.

5.1 Summary and Discussion Based on the First Research Question

The first research question was 'How do personal factors, and institutional factors, relate to learning approaches, study behavior, and time on task?

5.1.1 Direct Effect of Presage Factors on Learning Approaches

Five personal factors and two institutional factors were found to have a direct effect on the use of the proportion of deep approach usage out of both approaches. The personal factors were the university entrance score, students' mothers' education level, year of study, academic self-efficacy, and locus of control. The institutional factors were discovery learning and Guidance and Psychological Counseling program.

Out of all of the five personal factors and two institutional factors, academic self-efficacy was found to have the largest positive effect on the proportion of deep approach

usage out of both approaches showing that the higher the students' academic self-efficacy, the more likely they will use the deep approach than the surface approach when studying. This is in line with the study conducted by Cassidy and Eachus (2000) on 130 undergraduate students studying in the Faculty of Health, Care and Social Work Studies in a British University where academic self-efficacy was found to positively correlate with the deep approach, and also in line with the study conducted by Suphi and Yaratan (2011) on 99 Turkish and Turkish Cypriot undergraduate students taking a Statistics I course in the Educational Sciences program in a university in North Cyprus. This result is also in line with similar studies conducted in Turkey (Topkaya et al., 2011), in Spain, (Fenollar et al., 2007), in Australia (Habel & Habel, 2010; Papinczak et al., 2008), and in the United Kingdom (Prat-Sala & Redford, 2010).

The second personal factor to have a positive effect on the proportion of deep approach usage out of both approaches was internal locus of control showing that students with more 'internal' locus of control will more likely use the deep approach than the surface approach when studying. Other studies that found 'internal' locus of control to lead to the use of the deep approach and 'external' locus of control to the use of the surface approach are those by Biggs (1985), Cassidy and Eachus (2000), Suphi and Yaratan (2011) and Wigen et al., (2003). Cetinkalp (2010) looked at the effects of learning goals (students who focus on developing competence) on locus of control and found that students with learning goals also had 'internal' locus of control.

LOC in this study did not directly affect course grade. This is in line with other studies where internal LOC was not found to predict academic success (Brenenstuhl & Badgett, 1977; Bozorgi, 2009; Watkins, 1987).

The only institutional factor found to have a direct positive effect on the proportion of deep approach usage out of both approaches was discovery learning showing that when the discovery learning method is used, the students are more likely to use the deep approach than the surface approach when studying. This is a logical finding as the discovery learning method requires deep understanding in order for the student to be able to discover the knowledge or skill being learned. There are, however, mixed findings on this topic. Baeten, Kyndt, Struyven & Dochy (2010) reviewed articles on the effect of different modes of teaching on learning approaches published after the year 2000 and discovered that some found the student-centered approach to instill the use of the deep approach (Richardson, Dawson, Sadlo, Jekins & Mcinnes, 2007; Tetik, Gurpinar, & Batı, 2009; Wilson & Fowler, 2005), some found the use of the surface approach to increase with student-centered teaching methods (Nijhuis Segers,& Gijselaers, 2008), while others stated that no difference was found in the use of the approaches (McParland, Noble, & Livingston, 2004). As studies on the effect of teaching methods on learning approaches of Turkish university students were not come across, the results of the study conducted by Ünal and Ergin (2006) on primary school students will be presented. This study showed that although there was a significant effect of discovery learning on academic achievement, there was no significant effect on the use of the learning approaches.

University entrance score was found to have a negative affect on the proportion of deep approach usage out of both approaches showing that the higher the students' university entrance score the less they are likely to use the deep approach and more likely to use the surface approach when studying and visa versa. The majority of the literature published on university entrance scores or academic history are mainly concerned with their effect on academic performance in university (Hargett, Bolen & Hall, 1994), and usually showing that there is a positive effect in the first academic year (Eikland & Manger, 1992; Dickson et al., 2000; Kimball et al., 1981; Lineweber & Vacha, 1985; McKenzie et al., 2004; Michaels & Miethe, 1989; NSSE, 2006; Tait & Entwistle, 1996). There were fewer studies that concentrated on the effect of university entrance scores on the use of the learning approaches. One such study conducted by Hargett et al. (1994) on 532 undergraduates enrolled in a Psychology course in an American university, found that the students receiving higher points in the Scholastic Aptitute Test (SAT) (which is sometimes used as an entry requirement for universities) used the surface approach more than students with lower SAT scores. The authors suggested that the reason for this could be because the American education system "fosters this type of learning" (p. 9). Another study conducted on 109 students studying in Helsinki aiming to find out whether their university entry level skills predicted the use of the learning approaches and course grades in university, found a different result. Their university entrance exam contained a section which intended to measure whether they used the deep approach. The results of their study found that the students achieving high marks for this section of the university entrance exam (showing high use of the deep approach) also gained high grades for their advanced courses (Lindblom-Ylanne, Lonka & Leskinen, 1999).

Year of study was found to have a negative affect on the proportion of deep approach usage out of both approaches showing that the higher the students' year of study the less they are likely to use the deep approach and more likely to use the surface approach when studying. This is in line with studies conducted in Turkey on students studying to be Science and Technology teachers (Dinçer, Akdeniz, & Devecioğlu, 2008), in Hong Kong where Kember, Charlesworth, Davies, McKay, & Scott (1997) evaluated data from a survey conducted by Kember and Gow (1991) on 2143 students studying in undergraduate courses and reported that there was a steady decline in the use of the deep approach as the year of study increased. Also in Australia where a study on 2,365 students who were enrolled in higher educational institutes, showed these students to use the deep approach less as their year of study increased (Biggs, 1987b), and in Scotland where qualitative and quantitative research was conducted on undergraduates enrolled in Social and Management Sciences, Publishing, and Engineering programs, found the use of the deep approach to learning to steadily decrease with year of study, specifically showing an increase in the use of the surface approach with the Engineering students (Thomson & Falchikov, 1998), and also in Ireland where a longitudinal study was conducted on Accounting and Business undergraduate students where a steady increase of the use of the surface approach was found (Ballantine, Duff & Larres, 2008). As a result of the semi-structured interviews conducted by Gow and Kember (1990), the reasons for the use of the surface approach were categorized according to the responses as "work pressures; assessment pressures; extrinisic motivation; didactic tertiary teaching versus interactive teaching at school; surface demands of lecturers; and rote memorization" (p.315).

There were, however, literature that showed the opposite for example:

a. the study conducted on 141 Turkish university students enrolled in the Physics Education program where the use of deep approach was seen to increase with the year of study and vise versa for the surface approach (Selçuk et al., 2007),

b. the study conducted on 251 Turkish university students enrolled in the Middle School Science and Mathematic Field Education program where the students in the fourth year of their study were found to significantly use the deep approach more than the students in their first year of study (Ellez & Sezgin, 2002),

c. the study on 806 Turkish undergraduates in Turkey and simultaneously 206 American undergraduates in the USA where it was found that the higher the year the more the students used the deep approach and visa versa (Senemoğlu, 2011),

d. a study on 160 Turkish undergraduates, studying to be Chemistry teachers, showed that these students increased the use of the deep approach and lowered the use of the surface approach as their year of study increased (Koçak & Yücel, 2009).

Mothers' education level was found to have a negative affect on the proportion of deep approach usage out of both approaches showing that the higher the students' mother's education level the less they are likely to use the deep approach and more likely to use the surface approach when studying and visa versa. A similar result was found when a

study was conducted on 99 students taking a Statistics I course in the Educational Sciences Department in EMU two years prior to the present study (Suphi & Yaratan, 2011). Although a portion of the students took part in both studies, it is interesting to note that the effect, even though it is small, is still found to be significant. On scanning the literature on this topic no other similar result could be found regarding just mothers' education level. One reason could be that some studies only use the fathers' education level rather than using both the mothers' and fathers' education level (Engin-Demir, 2009). Two studies showing both mothers' and fathers' education level to yield similar results as this study was one conducted by Ken, Darmawan, & Chen (2007) in Malaysia the other by Biggs (1987) in Australia both finding students with parents of lower education levels to be more likely to use the deep approach. The study conducted by Ken et al., (2007) also found that active parent involvement in their children's university studies also induced the use of the deep approach.

Guidance and Psychological Counseling program was found to have a negative affect on the proportion of deep approach usage out of both approaches showing that the students studying in the Guidance and Psychological Counseling program are less likely to use the deep approach and more likely to use the surface approach when studying than the other programs. Laird, Shoup, Kuh, & Schwarz's (2008) study on the use of the deep approach to learning across disciplines found that the students in the Faculty of Education used both approaches to the same degree. Lizzio et al., (2002) found that the use of the learning approaches did not differ due to the difference in disciplines but rather to the students' perceptions of their academic environment. That is the higher the students' perceptions of the quality of teaching where the goals and standards are clear,

workload manageable, assessment is appropriate etc., the more the student will be prone to use the deep approach to learning and visa versa (Lizzio et. al., 2002). So, maybe these factors could be contributing to the choice of learning approaches selected by the students enrolled in the Guidance and Psychological Counseling program taking the course selected for this study. Or maybe these factors may be generally applicable to most of the courses in this program. Further investigation is required before any generalization can be made.

So, unfortunately, the proportion of DA out of both approaches did not significantly predict academic success. The literature yields mixed results on this topic. However, those that are in line with this study are:

i. a study on South African undergraduate students studying Chemistry, who were mainly first generation students (the first in their family to attend higher education), using the deep approach were found to lead to failures (Rollnick et al., 2008);

ii. a study on 1078 first year Australian undergraduate students, with the majority being mature students. Although the mature students were more apt to using the deep approach and gaining higher GPA's, on the whole the deep approach did not significantly predict academic success (Burton et al., 2009);

iii. a study on 97 first year Australian undergraduate distance education students, where the deep approach was not found to significantly predict academic success (Burton & Nelson, 2006);

iv. studies on 192 Norwegian undergraduate students (Diseth & Martinsen, 2003) and on 476 Norwegian undergraduate students (Diseth et al., 2006) where in both studies the deep approach did not significantly lead to academic achievement;

v. a study on 630 Turkish undergraduate students where neither the deep approach nor the surface approach was found to have a significant path to academic achievement (Topkaya et al., 2011); and

vi. the study on 130 undergraduate British students studying in the Faculty of Health, Care and Social Work Studies, where the use of the deep approach was not found to be associated with academic success (Cassidy & Eachus, 2000).

5.1.2 Direct Effect of Personal and Institutional Factors on Study Behavior

Two personal and two institutional factors were found to have a direct effect on study behavior represented by long range task. The personal factors are the university entrance score and academic self-efficacy. The institutional factors are Guidance and Psychological Counseling program, Social Sciences Teacher Education program, and proportion of deep approach out of both approaches.

Out of the two personal factors academic self-efficacy was found to have the largest positive effect on long range tasks showing that the higher the students' academic self-efficacy the more likely they will carry out long range tasks based on the items in Table 16 (p. 135) when studying for the course chosen for administration. Eikland and Manger (1992) found similar results on their study of Norwegian undergraduate students.

University entrance score, the second personal factor, was found to have a negative effect on long range tasks showing that the higher the students' university entrance score the less likely they will carry out long range tasks based on the items in Table 16 (p. 135) when studying for the course chosen for administration. On conducting literature reviews to back up this finding, no study was found conducted on these factors.

Out of the institutional factors, Guidance and Psychological Counseling program and Social Sciences Teacher Education program were both found to have a negative effect on long range tasks showing the students in these programs are less likely to carry out long range tasks when studying for the course chosen for administration than the other programs and more so the Social Sciences Teacher Education program students. This is an interesting result and can be further researched to find out the underlying factors for this occurrence. No other study has been found specific to students enrolled in these programs.

The final institutional factor out of the three to have an effect on long range tasks was the proportion of deep approach usage out of both approaches. This factor was found to have a positive effect on long range tasks showing the more the students use the deep

approach the more likely they will carry out long range tasks based on the items in Table 16 (p. 135) when studying for the course chosen for administration. Although countless studies have been conducted on learning approaches with different factors and study behavior with similar factors, no study seemed to incorporate the effect of the learning approaches on study behavior. It could be due to the fact that both these factors are considered part of the same family and researchers tend to choose one or the other for their research. Even if both variables are used in one study, their effect on other variables are researched rather than the effect on each other.

5.1.3 Direct Effect of Personal and Institutional Factors on Time on Task

Two personal and two institutional factors were found to have a direct effect on time on task. The personal factors are age and year of study. The institutional factors are Music Teaching program and Social Sciences Teacher Education program.

Age was found to have a positive effect on time on task showing that the older the students are, the more likely they will spend further time on the tasks shown via the items in Table 17 (p. 137) when studying for the course chosen for administration. This is understandable because with age the year of study and courseload may increase and so the maturer students may want to be more successful in their studies and be more focused on graduating. This is in line with the literature. Studies incorporating time spent on academic tasks outside class and age in their research, found the increase of age to significantly predict more time spent on academic study (Nonis & Hudson, 2006; Nonis & Hudson, 2010).

Year of study was found to have a negative effect on time on task showing that the higher the students' year of study, the less time they will spend on the tasks shown via the items in Table 17 (p. 137) when studying for the course chosen for administration. This result seems to be contradicting the positive effect of time on task mean and age but the reason for this could be that students' ages are not confined to the year of study. This sample has mature students who are keen to graduate as soon as possible in order to take care of their family responsibilities so they would not like to take the risk of failing any course by putting in less effort whereas the younger final year student may not be as concerned.

The Music Teaching program and the Social Sciences Teacher Education program were found to have a positive effect on time on task showing that the students enrolled in these programs (more so the students in the Social Sciences Teacher Education program) are more likely to spend more time on the tasks shown via the items in Table 17 (p. 137) when studying for the course chosen for administration than the other programs.

The proportion of deep approach usage out of both approaches were found to have a positive effect on time on task showing that the more the student uses the deep approach, the more time they will spend on the tasks shown via the items in Table 17 (p. 137) when studying for the course chosen for administration. Although the literature on learning approaches does not directly mention the actual number of hours spent on tasks per week for each approach, it does state one of the reasons for not using the deep approach to be due to course workloads (Lizzio et al., 2002; Diseth et al., 2006;

McKenzie et al., 2004) meaning that more time is needed to interact with the materials so that deep meaningful learning can occur.

Long range task mean was found to have a positive effect on time on task showing the more the student carries out the long range tasks presented in Table 16 (p. 135) the more time they will spend on them when studying for the course chosen for administration. This is in line with the literature as the meta-analytic study on study behavior conducted by Crede and Kuncel (2008) also shows a small and positive effect of study behavior on time on task.

The two institutional factors found to have a direct effect on time on task are two programs: the Music Teaching program and the Social Sciences Teacher Education program. This result shows that the students in these programs are more likely to spend more time on the tasks when studying for the course chosen for administration than the other programs.

5.2 Summary and Discussion Based on Second Research Question

The second research question was 'How well do learning processes (learning approaches, study behaviors and time on task) predict academic success controlling for personal and institutional factors?'

5.2.1 Direct Effect of Personal and Institutional Factors on Course Grade

Two personal and three institutional factors were found to have a direct effect on course grade. The personal factors were year of study and present GPA. The institutional factors were Guidance and Psychological Counseling program and Middle School Math Teacher Education program.

Year of study was found to have a positive direct effect on course grade showing that the higher the students' year of study, the higher the course grade they received for the course chosen for administration. Although studies present information on the students' year of study, the results presented on the studies which include more than one year, are of age with other factors or the effect of year of study on the usage of learning approaches.

GPA was found to also have a positive direct effect on course grade showing that the higher the students' present GPA, the higher the course grade they received for the course chosen for administration. This is an understandable result as students who already have a high GPA will want to keep up their success. This is in line with the literature where students' GPA was found to be positively related to academic achievement (Okpala, Okpala, & Ellis, 2000) or "the best predictor of grades" (Davidson, 2002, p. 38), or even "the single best predictor" whether courses were taken face-to-face or online (Kiriakidis et al., 2011, p.21).

The students' present GPA was found to have the largest direct effect on course grade in this study and is in line with many other studies (Okpala et al, 2000; Davidson, 2002; Kiriakidis et al., 2011). This is an important finding as, if students can be supported to gain a high GPA from the very first semester, this may give them the incentive to keep up the success.

Three institutional factors were found to have a direct but inverse effect on course grade. Two of these factors were the Guidance and Psychological Counseling program and the

Middle School Math Teacher Education program showing that the students in these programs received lower grades for the course chosen for administration than the students in the other programs taking a similar course. Further investigation will need to be made before stating the problem behind this result.

The third institutional factor to have an inverse direct effect on course grade was the evaluation procedures showing that the higher the cognitive learning levels, such as analysis, synthesis and evaluation, depicted for the evaluation procedures and weights assigned for each component of the grade (eg. homework, project, midterm exam, final exam etc.), the lower the course grade that was achieved for the course chosen for administration. This shows that the students are having difficulty or are not used to being assessed at higher cognitive learning levels or had difficulty being assesed at this level for the course chosen for administration. The literature reviewed on this topic was found to be concerned about the use (or rather the lack of use) of the higher cognitive learning levels in higher education, reasons why they are not used, and the articles concluded with suggestions as to how to incorporate this level of assessment (Rust, 2002; Biggs, 1999; Biggs, 2003). This is another problem that may need to be tackled as the higher cognitive level of learning is a desired level for higher education.

5.2.2 Direct Effect of Learning Processes on Course Grade

Two learning processes were found to have a direct effect on course grade. One, the long range task, was found to have a direct positive effect, while the other, time on task, was found to have a direct inverse effect.

The long range task, which was found to have a direct positive effect on course grade, shows that the more the student carries out the long range tasks presented in Table 16 (p. 135), the higher the course grade they received for the course chosen for administration. This is in line with the literature. Bliss and Sandiford (2003) and Bliss and Vinay (2004) using the Spanish version of the Study Behavior Inventory found all factors to strongly correlate with academic achievement. Fuente and Cardelle-Elawar (2009) using a Spanish Study Habits Inventory created by Fernandez Pozar in 2007 found it to positively predict high academic performance. A mega-analysis of researches on study strategies which included study habits, published between 1968 and 1993, found that the use of numerous study skills positively effected academic achievement (Purdie & Hattie, 1995). Crede and Kuncel (2008) conducted a meta-analysis (N=72,431) on all types of study behavior researches published between 1872 and 2005, categorizing 10 study skill constructs for university students, found that study skills predicted academic success independent of high school and university entrance scores. So much so that they stated that study skills "should be regarded as the 3rd pillar of academic success" (p.425).

Time on task was found to have a negative effect on course grade showing that the more time students spend on the tasks shown via the items presented in Table 17 (p. 137) when studying for the course chosen for administration, the lower the course grade they received. A similar result has been found with a sample of 34 Chinese Mechanical Engineering undergraduate students studying in a university in Hong Kong where it was found that longer hours spent on study produced poor grades (Kember et al., 1995). These students, however, were found to be using the surface approach to learning. As a remedy "individual study counseling" (p. 341) in order to instill appropriate study

approaches was suggested. This could be a valid remedy suggestion for the students in this study as regardless of what approach they are using, there seems to be some problem if they are spending more time and earning lower grades. A meta-analysis of 52 researches on study strategies and academic achievement conducted between the 1960's to early the 1990's, found that the more time spent on academic tasks did not have a high correlation with academic achievement (Purdie & Hattie, 1995). Three further studies, all on undergraduate students enrolled in business related courses in American universities, found that time spent studying had no affect on academic achievement (Nonis & Hudson, 2006; Nonis & Hudson, 2010; Okpala et al., 2000). Nonis and Hudson (2010) on finding that students spending more time on study did not necessarily produce better results suggested that real studying may not be related to time but to techniques so that the time spent on study is effective. So it is not how long you spend on an academic task but what you do and how you do it during that time that is effective.

Unfortunately, no direct effect was found between deep approach out of both approaches to course grade. Diseth and Martinsen, (2003) suggest that the reasons for this may be the imposition of having to stick to the curriculum. This may result in the students not seeing it necessary to explore out of the course content frame as this would not be rewarded. The evaluation procedures could also be a reason – the examination questions and other assessments really require a deep approach to learning (Diseth & Martinsen, 2003; Rollnick et al., 2008). Limited time allowances during exams have also been found to severely hinder deep approach usage as students using the deep approach will want to read, understand, synthesize, the material and then "plan out a structure for their response" (Minbashian, Huon & Bird, 2004). Also, the exam marks received by the

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students, do not show to what extent either of the learning approaches was used, as the exams are not graded in that way (Minbashian et al., 2004).

5.2.3 Indirect Effect of Personal Factors on Course Grade

Six presage personal factors were found to have an indirect effect course grade. Four of these were inverse effects while the remaining two were positive.

The university entrance score was found to have an inverse indirect effect on course grade showing that the higher the score, the lower the course grade received for the course chosen for administration. When inspecting the paths through which the inverse effect ran, it can be seen that both the mediating factors proportion of deep approach out of both approaches and long range tasks also had inverse effects with university entrance score showing that students with higher scores preferred the use of the surface approach and did not carry out the long range tasks depicted in the study.

Age also has an indirect and inverse effect on course grade, running through the time on task mediating factor, and showing that the older the student, the more time they will spend on the tasks but receive a lower grade for the course chosen for administration.

The third indirect and inverse effect out of the presage and personal factors on course grade is the students' mothers' level of education whereby the lower the mothers' education level the higher the course grade received by the student and visa versa. The mediating factor in this instance is the proportion of deep approach usage out of both approaches running through long range mean and/or time on task. It can be seen that these students are using the deep approach more than the surface approach and also

carrying out the long range tasks and receiving a higher course grade, but those who are spending much more time on these tasks are not doing so well. The opposite is true for the students whose mothers' level of education is higher, in this case, these students are more apt to use the surface approach and not carry out the long range tasks and therefore get a lower grade for the course chosen for administration.

The fourth indirect and inverse effect out of the presage and personal factors on course grade is locus of control. This shows that the lower the students' locus of control which means they have a higher intrinsic locus of control, the higher the course grade they received for the course chosen for administration. This indirect effect occurs through the mediating proportion of deep approach usage out of both approaches learning processes variable and passing through long range task and/or time on task to course grade. This shows that students with higher internal locus of control are more apt to use the deep approach and long range tasks which lead to a higher course grade. Only the path also passing through time on task, either via the proportion of deep approach usage out of both approaches or the long range task results in a lower grade for the student.

The remaining two indirect effects of presage personal factors which have a positive effect are year of study and academic self-efficacy.

The year of study was found to have a positive indirect effect on course grade showing that the higher the academic year of study, the higher the course grade received for the course chosen for administration. When inspecting the paths through which the indirect paths ran, it can be seen that both the mediating factors proportion of deep approach out

of both approaches and long range tasks also had inverse effects with year of study showing that as the students' academic year increased the less they used the deep approach and carried out the long range tasks but opted for the use of the surface approach which in return produced lower grades. Only when the time on task factor was added, meaning that they spent more time on the surface approach (rote learning) did they receive a higher grade for the course chosen for administration.

So, in general as the total, direct and indirect effects show, the higher the students' academic year of study, the higher the course grade they received for the course chosen for administration.

There is, however, an important point to note with this result. The students in the earlier years of their program seem to be using the deep approach and long range tasks more than the students in higher years of study and gaining higher grades than their classmates. Could this mean that somewhere along the line the students realize that the use of the deep approach and long range tasks are not essential in order to pass the course so they gradually change their approach and study behaviors?

The second indirect and positive effect out of the presage and personal factors on course grade is the students' academic self-efficacy showing that the higher the academic self-efficacy of a student, the higher the course grade they received for the course chosen for administration. The mediating paths ran through the learning processes variables proportion of deep approach usage out of both approaches, long range task and/or time on task to course grade. the paths running through deep approach usage out of both

approaches and long range task to course grade show that the higher the students'
academic self-efficacy the more likely they will use the deep approach and long range
tasks and gain a higher grade for the course. Only when the path runs through the time
on task factor does this lead to a lower grade.

5.2.4 Indirect Effect of Institutional Factors on Course Grade

Four presage institutional factors were found to have an indirect effect on course grade.
One of these had a positive indirect effect while the remaining three had an inverse
indirect effect.

The Guidance and Psychological Counseling program, Music Teaching program, and
Social Sciences Teacher Education program all have a total and indirect inverse effect
on course grade. This shows that, in general, the students studying in these programs are
getting a lower course grade for the course chosen for administration than students in
other programs.

Out of these three programs only the students in the Guidance and Psychological
Counseling program are using the Surface Approach more than the other programs. The
students in this and the Social Sciences Teacher Education program are not carrying out
the long range tasks and are getting lower grades for the course chosen for
administration. The students in the Guidance and Psychological Counseling program are
only seen to get a higher grade when they are spending more time on the study tasks
where the opposite is happening for the students in the Music Teaching and Social
Sciences Teacher Education program.

The discovery learning has a total and indirect positive effect on course grade showing that the higher the use of discovery learning, the higher the course grade students will receive for the course chosen for administration. The indirect effect runs through the mediating learning processes factors proportion of deep approach usage out of both approaches, long range task and time on task. This result shows that discovery learning leads to the use of the deep approach and utilization of long range tasks which results in a higher course grade. Only when more time is spent on the study tasks is the student seen to receive a lower grade for the course chosen for administration.

5.2.5 Indirect Effect of Learning Processes on Course Grade

There is only one learning process factor, which has a positive indirect and total effect on course grade and that is proportion of deep approach usage out of both approaches. This is a pleasing result showing that the more the deep approach is used out of both approaches, the higher the course grade students will receive for the course chosen for administration. The paths through which this indirect effect passes is through long range tasks to course grade whereby the result show the student to receive a higher grade for the course. When the path passes through time on task only then is there an inverse effect showing once more that the students spending more time on the tasks are not getting a high grade for the course chosen for administration.

5.3 Implications

The implications for this study as a consequence of the results are presented below:

5.3.1 Direct Effect of Personal and Institutional Factors on Course Grade

Out of the thirteen personal and institutional factors only two were found to have a direct positive significant effect on course grade. These were GPA and year of study showing

that the higher the students' GPA and year of study, the more likely they will receive a higher course grade. The implications of this result are that students in their first and second years of study are more at risk of receiving lower grades which will affect their GPA. As can be remembered from the introduction section of this thesis, it was mentioned that due to the competition between universities to gain more students, university entrance standards have been lowered resulting in classrooms filled with students of vast diverse backgrounds. This problem will need to be addressed as early on as possible so no student feels dismayed or frustrated and as a result lose their confidence which may lead to their attaining lower grades. This predicament can be alleviated by first helping students settle into university so they can concentrate on their education as soon as possible. Second, their their background knowledge, study skills, level of self-efficacy can be determined and third, necessary remedial courses can be offered separately or integrated into their present courses. This may help give more students the opportunity to do well.

Three institutional factors found to have a negative direct effect on course grade were the Guidance and Psychological Counseling program, Middle School Math Teacher Education program, and evaluation procedure weighted mean showing that students enrolled in these programs received a lower course grade than students in the other programs. Further research may need to be conducted to unearth the underlying reason. For example is this the case for the specific course used in this study or is this a general trend with all the courses in these programs? In addition to this, the teaching and evaluation methods could also be looked into as this study has already shown that the students in the Guidance and Psychological Counseling program tended to use the

Surface Approach more than students in other programs and use the long range task study behavior less than their counterparts for the course in this study.

Academic accreditation bodies, such as the Scottish Qualification Framework (SCQF) stipulates the level of university students' evaluation to reach level 8. This level states that the General Cognitive Skills should include "Undertake critical analysis, evaluation and/or synthesis of ideas, concepts, information and issues which are within the common understandings of the subject/discipline" (Curtis, 2010). Therefore the evaluation procedures producing a direct negative effect on course grade in this study, was a disappointing outcome, showing that the use of higher cognitive levels of evaluation resulted in the students receiving a lower course grade. There could be several reasons for this result and further investigation could be benefical. The multiple choice format of the university entrance examination may not fully prepare the student for the higher level of cognitive evaluation desired in university. Therefore the change in the level of evaluation in university may effect some students especially those who have managed to enter university with a poorer academic background. With the surreptitious pressure on teachers to have a certain student pass rate for their courses, they may opt to conduct their evaluations to enable an acceptable number of students to pass. The alternative remedy could be to help the struggling students to cope with this level of assessment by giving and marking extra assignments at this level, but this will require extra time on the part of the student as well as the teacher. Also, preparing and marking examination papers and homework assignments aimed at this cognitive level takes much more time than examinations and homework prepared and marked at the lower levels of the cognitive domain. Therefore the number of students per class, teacher and student

workloads and the number of topics to be covered by a certain time parameter, may hinder some teachers in turning this situation around.

Policies and the curriculum could be amended to allow for evaluation at this level. This could include incorporating remedial courses for students in need. So, to summarize, this finding may be a sign to look into educational policies, curriculum design and assessment methods.

5.3.2 Direct Effect of Learning Processes on Course Grade

Out of the three learning processes, there were mixed results. The proportion of deep approach out of both approaches did not have a direct positive effect on course grade only through the use of the long range tasks was this found to be so. The use of long range tasks was found to produce better grades but students who spent the most time on these tasks were found to attain poorer grades.

As the learning processes do not stand alone and are affected by the presage factors, the implications for these will be made in the following sections concerning the indirect effects of factors on course grade.

First, the implications for the indirect effect of proportion of deep approach usage out of both approaches on course grade through long range tasks will be explained.

5.3.3 Indirect Effect of Presage and Learning Processes on Course Grade

The following have an indirect effect on course grade.

5.3.3.1 Effect of Presage Factors on Proportion of Deep Approach Usage

The use of the deep approach is advocated by academic staff, administrators, accrediting academic bodies and prospective employers, as it helps the student understand the material by linking it to prior knowledge thereby make it long lasting, attainable and usable when required. The positive finding regarding the use of the deep approach in this study was that academic self-efficacy and intrinsic locus of control together with the use of discovery learning increases its use. This is an important finding and can be enhanced.

The students' academic self-efficacy can be steadily increased by incorporating self-efficacy enhancing methods of teaching. This can be done in all courses across the board, where the teacher gives small academic tasks a little above what they can achieve whilst supporting and motivating them all the way to ensure satisfactory accomplishment. With the continuous assignment of similar tasks and with adequate praising, an increase in the students' self-efficacy may be seen.

The discovery learning method is a theoretically known method by educationalists but to what extent is it used? In this study it has been found to be used and also to have a significant impact on the use of the deep approach which is a very pleasing outcome. This method can be supported by administrators to help more academicians use this method by listening to the problems of the academic staff already using it and offering refresher courses to other academic staff to motivate and give ideas for its use in their courses.

The negative finding regarding the use of the deep approach was that although students seem to begin using the deep approach in their earlier academic years, this seems to decrease with an increase of every academic year. Researchers in this field have put forward many reasons for the deep approach not being used such as method of assessment, educational policies, method of teaching (Struyven et al., 2002), "surface demands of lecturers" (Kember & Gow, 1990, p. 315), and heavy workload (Cope & Staehr, 2005). Generally the academic staff is more concerned with their own courses. For example, what they think it should entail and the amount of work needed to be done outside of class in order to learn the material for the course. As they, themselves, went through the same process, when they were students, and had somehow managed to cope with the workload of all their courses, they are expecting the same from their students. It is important to remember though, that the profile of students are changing year by year as the competition between universities to enroll students are increasing thus enabling students from different backgrounds and capabilities to enter university. Whatever their academic study skills, background, and capabilities may be, students, their families, academic staff and the university administrators want all students to do well. In this case it might be an idea not just for administrators when designing the curriculum to bear this in mind but for academic staff teaching the same group of students in the semester to come together and discuss their plans for their course and work out a feasible plan for each of their courses which will encourage students to use the deep approach to learning. After all, when we think about the aim of going to university, amongst many reasons, one of the most important is to become a knowledgeable and skilled expert in their choice of occupation (Janssen, 1996) whether it be a Counsellor, Music Teacher, Social Sciences Teacher, Middle School Math Teacher, or Accountant etc. "Only 'deep level

learners' can transform the person they are at enrollment into the expert who will survive the final examinations at the end of higher education." (Janssen, 1996, p. 119). The Educational Credit Transfer System ECTS, which was incorporated into EMU's course plans, are an important and beneficial first step towards this aim, but teachers may want to plan out when to give out projects, homework, and research to enable the students to feel less pressured so they can feel they have the time to approach their work in a deep and meaningful manner.

As for the students who are already nearing graduation but are gaining lower grades due to the lack of proficiency in the use of the deep approach, study sessions can be given to students individually or in small groups where they can be shown how to study more effectively in a deep and meaningful way.

The remedial suggestions made above can be initially applied to the students in the Guidance and Psychological Counseling program as a pilot study due to them being found to use the surface approach more than the deep approach out of all the other students in the study.

5.3.3.2 Effect of Personal and Institutional Factors on Study Behavior

Alongside approach to learning, study behavior in the form of long range tasks is also an important factor which has shown to lead to academic success (course grade) in this study. The indirect effect of personal and institutional factors on course grade via study behavior, namely long range tasks, is as follows:

Academic self-efficacy was found to have a positive direct effect on course grade via long range tasks. This finding can be used to diminish the negative effect found on long

range task which were: students attaining higher university entrance scores, students studying in the Guidance and Psychological Counseling program and Social Sciences Teacher Education program were using the long range tasks less than students in other programs. This can be remedied by increasing students' self-efficacy by incorporating the use of these skills as homework, marking the homework in terms of the course content and study skill used/assigned, giving feedback, and plenty of encouragement and praise. In this way academic self-efficacy will also be built and the study skills will, in time, become a behavior.

5.3.3.3 Effect of Personal and Institutional Factors on Time on Task

It is well-known that a certain amount of time should be spent on academic tasks but how much time is spent and whether it is spent effectively is an important matter. If students are not competent or proficient in their study skills then the excess time used will not always help the student to reap higher academic rewards.

In this study, negative results concerned with time on task were found whereby the students spending more time than their peers carrying out long range tasks and using the deep approach were found to receive lower grades. This result was found to be more prominent for the older students. This could be a sign that these students are not competent in these skills and may need help.

The problem may stem from the influx of students enrolling into university with diverse backgrounds which is a result of universities being forced to lower their entrance requirements in order to be able to compete with other universities. Academic staff may need to acknowledge that their student population consists of such students, find a way

of identifying them and possibly include courses in the curriculum that will help remedy this problem in order to help them attain academic success (Nonis & Hudson, 2006).

With the economic measures recently put into place in EMU, class sizes have risen to 35 and above in some classes. Pressures instilled by the curriculum to cover certain topics within a certain time frame, together with administrative obligations, course loads etc., limits the academic staffs' time to weed out and effectively train students to improve their study behavior and approaches. When academic staff incorporates certain methods to instill this approach to learning as well as the relevant study behavior, the students who are not used to this method of learning may be resistant at first as it will entail extra effort on their part. In addition to this, having to change their method of 'learning' may, at first, be intimidating to them due to the fear of failure.

5.3.4 Summary of Implications

Taking into consideration all the implications mentioned in this study, they can be divided into implications for instructors, implications for administrators/curriculum developers, and implications for parents.

5.3.4.1 Implications for Instructors

The results of this study show that the higher the students' GPA and year of study, the higher the students' academic success was found to be. This means that the sooner the students start to gain high grades for all their courses and attain a high GPA, this will help them be successful in their future courses too. Remembering that classrooms are presently being filled with students of vast diverse academic backgrounds (because of university entrance standards being lowered), instructors need to determine their students' background knowledge, study behaviors and level of academic self-efficacy as

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early on as possible in order to integrate any remedial action via homework or classwork to overcome any hindrances.

The evaluation procedures producing a direct negative effect on course grade in this study shows that as the instructor uses the upper levels of the cognitive domain as part of his/her evaluation for homework, assignments and examination, the students' course grade was found to go down. To help alleviate this problem, instructors can begin to work on questions at this level during class hours so they can help students gain the skills and confidence via positive feedback to deal with evaluation at this level. Homework given at regular intervals with prompt feedback will also help in this process.

This study showed that the students with higher academic self-efficacy were more successful in their studies. The implication for teachers in this stance is to consistently build their students' academic self-efficacy by assigning reachable tasks and praising the student through immediate feedback.

The use of discovery learning was found to induce the use of the deep approach in this study. The implications for teachers is to try to use this method more often and if they find the need, to seek refresher courses or ask for assistance from experienced instructors in this field.

It was found that as the students' year of study increases their use of the deep approach decreases. As mentioned by the literature the reason for this could be due to the students' heavy workload (Cope & Staehr, 2005). The implication for teachers can be to

get together and present to each other their homework and assignment plans for the students they will be jointly teaching and work out a feasible assignment plan so the students will not feel overwhelmed and be able to continue to use the deep approach.

5.3.4.2 Implications for Administrators/Curriculum Developers

The evaluation procedures producing a direct negative effect on course grade has certain implications for administrators and/or curriculum developers. In order for instructors to be able help students be successful in evaluations conducted at the upper cognitive domain, class sizes need to be manageable and feasible for instructors to excert the necessary extra attention to this factor apart from just delivering their course content. In addition to this, the course content needs to be reduced in order to allow time to incorporate the above. Also policies stating that the level of evaluation must include analysis, synthesis and evaluation for all courses should be established. In addition to this, refresher courses can be offered to instructors who may wish to gain ideas on methods and techniques for evaluating at the upper cognitive domain level. Also a committee of experts in the field of evaluation in the upper cognitive domain level can be set up to help instructors if and when they need assistance.

The use of discovery learning was found to induce the use of the deep approach which indirectly lead to a higher course grade via the use of long range tasks in this study. The implications for administrators and curriculum designers is to encourage instructors to use this method by setting policies regarding class sizes to make this method manageable and feasible as well as reducing course content to enable time for instructors and students to benefit from discovery learning. In this way the instillation of the use of the deep approach especially starting from the first academic year will also be made

possible. Refresher courses can be offered to instructors who may wish to gain ideas on methods of using the discovery learning, how to instill deep learning and how to induce the use of the long range tasks for their particular courses.

As long range tasks was found to be the only significant positive learning process influence on course grade, administrators/curriculum designers could amend the curriculum by reducing the number of courses in the first semester of the students' first year at university to incorporate a course on effective learning entailing the use of long range tasks.

Students with higher academic self-efficacy were found to gain a higher course grade in this study. Based on this finding the implication for administrators could be to offer courses to instructors showing or reminding them how to increase students' academic self-efficacy.

5.3.4.3 Implications for Parents

This study shows that the lower the mothers' education level the more the student will likely use the deep approach and visa versa meaning that as the mothers' education level increases the students' tend to use the deep approach less and the surface approach more. A study conducted by Kek et al., (2007) found a similar result but with the addition of finding that as the parents' interest level in their children's studies increase so did the use of the deep approach. Although parents cannot do much about their education levels, the result of this study may be an implication to parents who are well educated to take note of the importance of finding time to take an interest in their students' studies.

5.4 Limitations

This study has several limitations. First, the results of the study only show what is happening for the particular course chosen across the board for all the programs and the results cannot therefore be generalized to cover each program completely. In order to get a clearer picture of the situation in a program, future studies could entail research being conducted on different types of courses within one program.

Second, as the type of questionnaires and inventories administered to the participants (students and teachers) were based on self-assessment, the responses given will be based on their own perceptions. To overcome this problem, observation of how students approach their learning, what study behaviors they have, how much time they spend on study tasks, what level of academic self-efficacy they have and what type of locus of control beliefs they have, could be made. The teachers teaching these students could be observed to see to what percentage they are using the discovery learning and expository teaching methods. This method has its drawbacks such as it being very time consuming, and therefore limiting the sample size.

5.5 Suggestions for Future Research

The implications and limitations of this study give rise to the following suggestions for future research:

1) A replication of this study on different types of courses within one program, maybe starting with the Guidance and Psychological Counseling program as the results showed the students enrolled here were more prone to using the surface approach to

learning and less long range tasks than their counterparts. The results from this research will ascertain to what extent and type of remedial action that may be needed to be taken.

2) An extention of this study can be conducted in other faculties within the Eastern Mediteranean University. This will reveal which faculties and programs may be in need of remedial action.

3) As GPA was found to be the best direct predictor of course grade, a similar study but using GPA as the dependent variable can be used.

4) A similar study can be conducted by including other factors in the study such as values and personality.

5) A qualitative study on mothers' and fathers' education level and the use of the learning approaches and their effect on academic success can be carried out.

5.6 Final Conclusion

This study has revealed that the students enrolled in the Faculty of Education in EMU are preferring to use the surface approach even if they begin to use the deep approach in their freshman year but the majority of the course grades were found to be between B- and B+ with only .2% failing. Therefore competition amongst universities in Turkey and North Cyprus have not brought about problems of underachievement as it has done in universities in developed countries but has brought problems of students passing courses

without fully understanding the course content. This could have a detrimental effect on the quality of education in years to come for future generations.

Graduating from university is not about grades and CGPA, it is what you learn that you take away with you and use in your future life that really counts. University should not be an institution that just teaches certain topics to students but an institution that teaches students how to learn for themselves, how to obtain information for themselves and turn that into knowledge that they require. It should also be an institution that helps students acquire skills and experience for their future profession, as well as help to increase their self-efficacy and internal locus of control. It is important for all the students to be successful in this way and not only an admired handful.

The students studying in the Faculty of Education, are themselves going to be the next generation of teachers. How they are taught, how they learn, their approaches and study skills will be their experience which will govern to a certain extent, how they teach the next generation. It is our duty to equip them with the most effective tools so that our future generations will be able to compete with the world and help to develop our nation.

It is hoped that the results of this study will help shed light on how to lend a hand to the students studying in the Faculty of Education in the EMU to become academically successful, to fulfill their potential, and become the best new generation teachers they can be thereby being a benefit to themselves, their families and their nation.

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APPENDICES

Appendix A: Personal Information Questionnaire
(Kişisel Bilgi Anketi)

Bu anket, bir doktora tez çalışmasının parçasıdır. Bu çalışmayı hazırlamaktaki amaç öğrencileri başarıya götürecek faktörleri belirleyerek öğrencilere, öğretim elemanlarına ve ailelere ışık tutmaktır. Verilen cevaplar hiçbir şekilde cevap vericileri bağlamadığı gibi kişisel olarak üçüncü şahıslara da aktarılmayacaktır.

Öğrenci No: ………………….	Cinsiyet: ☐ Erkek ☐ Kız
Doğum tarihiniz: ……./………/……….	
Uyruğunuz: ☐ TC ☐ KKTC	
ÖSS puanınız: ……………………………..	
DAÜ'ye giriş sınav puanınız:……………………..	

Şu anda okuduğunuz bölümü işaretleyiniz:

☐ İngilizce Öğretmenliği	☐ Bilgisayar ve Eğitim Teknolojileri Öğretmenliği
☐ Rehberlik ve Psikolojik Danışmanlık	☐ İlköğretim Matematik Öğretmenliği
☐ Matematik Öğretmenliği	☐ Sosyal Bilgiler Öğretmenliği
☐ Türkçe Öğretmenliği	☐ Okul Öncesi Öğretmenliği
☐ Türk Dili ve Edebiyatı Öğretmenliği	☐ Sınıf Öğretmenliği
☐ Fen Bilgisi Öğretmenliği	☐ Diğer: …………………………
En son GPA'iniz: ………………………	

Babanızın eğitim durumunu işaretleyiniz:

☐ Okur yazar değil	☐ Okur yazar	☐ İlkokul mezunu
☐ Ortaokul ve dengi okul mezunu	☐ Lise ve dengi okul Mezunu	☐ Yüksekokul mezunu
☐ Lisans mezunu (Fakülte mezunu)	☐ Yüksek lisansı mezunu (Master mezunu)	☐ Doktora mezunu

Annenizin eğitim durumunu işaretleyiniz:

☐ Okur yazar değil	☐ Okur yazar	☐ İlkokul mezunu
☐ Ortaokul ve dengi okul mezunu	☐ Lise ve dengi okul Mezunu	☐ Yüksekokul mezunu
☐ Lisans mezunu (Fakülte mezunu)	☐ Yüksek lisansı mezunu (Master mezunu)	☐ Doktora mezunu

Appendix B: Permission to use Turkish Version of Academic Self-Efficacy Scale

Nilgun hanim merhaba,

ilginize tesekkurler.kusura bakmayin yillik izinden yeni Ankaraya dondugumden mailinize ancak cevap verebiliyorum.

olcegi kullanmanizda benim acimdan bir sakinca gormuyorum, diger arastirmacilar ne dediler bilmiyorum. kullanabilirsiniz, lutfen arastirma sonuclarinizdan ve calismanizin nerede yayinlandigi konusunda bilgi verirseniz sevinirim.

ayrica universitelerarasi verilerin karsilastirilmasi acisindan ortak calismalarda yapabiliriz-olumlu bakarim.

iyi calismalar. selamlar...........gulay

--- On **Thu, 8/13/09, Nilgun Suphi** *<nilgun.suphi@emu.edu.tr>* wrote:

From: Nilgun Suphi <nilgun.suphi@emu.edu.tr>
Subject: Akademik Özyeterlik Ölçeği
To: denizg@hacettepe.edu.tr, gulayekici@yahoo.com
Date: Thursday, August 13, 2009, 5:43 PM

Sayın Yard. Doç. Dr. Miraç Yılmaz, Yard. Doç. Dr. Deniz Gürçay, ve Yard. Doç. Dr. Gülay Ekiçi,

Doğu Akdeniz Üniversitesinde, Eğitim Bilimlerinde doktora yapmaktayım,ayni zamanda öğretim görevlisiyim.

Akademik Özyeterlik Ölçeğinin Türkçe'ye Uyarlanması makalenizi okudum ve çok beğendim. Bu ölçeği araştırmalarımda kullanabilmek için sizden izin almak için yazıyorum. İzniniz dahilinde kullandığım taktirde tabiki sizlere ve Jerusalem ve Schwarzer'e atıfta bulunmak kaydıyla kullanacağımdan emin olabilirsiniz.

Saygılarımla,
Nilgün Suphi,
Doktora Öğrencisi,
Eğitim Bilimleri,
Doğu Akdeniz Üniversitesi.
E.M.U
Eastern Mediterranean University

Appendix C: Final Version of Turkish Academic Self-Efficacy Scale

Akademik Özyeterlilik Ölçeği (Jerusalem & Schwarzer, 1981) (T. Yılmaz, Gürçay & Ekici, 2007)

Size en uygun olan cevabı işaretleyiniz.

	Bana hiç uymuyor	Bana çok az uyuyor	Bana kısmen uyuyor	Bana uyuyor	Bana tamamen uyuyor
1. Üniversite öğrenimimde her zaman yapılması gereken işleri başarabilecek durumdayım.					
2. Yeterince hazırlandığım zaman sınavlarda daima yüksek başarı elde ederim.					
3. İyi not almak için ne yapmam gerektiğini çok iyi biliyorum.					
4. Bir yazılı sınav çok zor olsa bile, onu başaracağımı biliyorum.					
5. Başarısız olacağım herhangi bir sınav düşünemiyorum.					
6. Sınav ortamlarında rahat bir tavır sergilerim, çünkü zekama güveniyorum.					
7. Sınavlara hazırlanırken öğrenmem gereken konularla nasıl başa çıkmam gerektiğini genellikle bile**mem** (-).					

Appendix D: Updated Final Version of Turkish Academic Self-Efficacy Scale

Akademik Özyeterlilik Ölçeği (Jerusalem & Schwarzer, 1981) (T. Yılmaz, Gürçay & Ekici, 2007)

Size en uygun olan cevabı işaretleyiniz.

	Bana hiç uymuyor	Bana çok az uyuyor	Bana kısmen uyuyor	Bana uyuyor	Bana tamamen uyuyor
1. Üniversite öğrenimimde her zaman yapılması gereken işleri başarabilecek durumdayım.					
2. Yeterince hazırlandığım zaman sınavlarda daima iyi başarı elde ederim.					
3. İyi not almak için ne yapmam gerektiğini çok iyi biliyorum.					
4. Bir yazılı sınav çok zor olsa bile, onu başaracağımı biliyorum.					
5. Başarısız olacağım herhangi bir sınav düşünemiyorum.					
6. Sınav ortamlarında rahat bir tavır sergilerim, çünkü zekama güveniyorum.					
7. Sınavlara hazırlanırken öğrenmem gereken konularla nasıl başa çıkmam gerektiğini genellikle bile**mem** (-).					

Appendix E: Permission to use Turkish Translation of Locus of Control Scale

Sayın Suphi,

Rotter Ölçeğini araştırmanızda kullanabilirsiniz. Başarılar dilerim.
Saygılar,

Prof. Dr. İhsan Dağ

----- Orjinal Mesaj -----
Kimden: Nilgun Suphi <nilgun.suphi@emu.edu.tr>
Tarih: Monday, July 13, 2009 17:56
Konu: Size web sitenizden ulasiyorum...
Kime: dagihsan@gmail.com

> Sayın Prof. Er. İhsan Dağ,
>

> Doğu Akdeniz Üniversitesinde, Eğitim Bilimlerinde doktora yapmaktayım,ayni
zamandaöğretim görevlisiyim.
>

> Araştırma yaparken web sayfanızdaki Rotter'in İç-Dış Kontrol Odağı Ölçeği (RİDKOÖ) yü
gördüm. Bu ölçeği araştırmalarımda kullanabilmek için sizden izin almak için yazıyorum.
İzniniz dahilinde kullandığım taktirde tabiki size ve Rotter'e atıfta bulunmak kaydıyla
kullanacağım hocam.
>

> Saygılarımla,
> Nilgün Suphi,
> Doktora Öğrencisi,
> Eğitim Bilimleri,
> DAU
 E.M.U
 Eastern Mediterranean University

Appendix F: Rotter'in (1966) İç-Dış Kontrol Odağı Ölçeği (RİDKOÖ) (Dağ, İ. 1991)

Bu anket, bazı önemli olayların insanları etkileme biçimini bulmayı amaçlamaktadır. Her maddede 'a' ya da 'b' harfleriyle gösterilen iki seçenek bulunmaktadır. Lütfen her seçenek çiftinde sizin kendi görüşünüze göre gerçeği yansıttığına <u>en çok inandığınız cümleyi (yalnız bir cümleyi) seçiniz</u> ve bir yuvarlak içine alınız.

Seçiminizi yaparken, seçmeniz gerektiğini düşündüğünüz veya doğru olmasını arzu ettiğiniz cümleyi değil, gerçekten daha doğru olduğuna inandığınız cümleyi seçiniz. Bu anket kişisel inançlarla ilgilidir, bunun için 'doğru' ya da 'yanlış' cevap diye bir durum söz konusu değildir.   Bazı maddelerde her iki cümleye de inandığınızı ya da hiç birine inanmadığınızı düşünebilirsiniz. Böyle durumlarda, size en uygun olduğuna inandığınız cümleyi seçiniz. Seçim yaparken her bir cümle için bağımsız karar veriniz; önceki tercihlerinizden etkilenmeyiniz.

1. a. İnsanların yaşamındaki mutsuzlukların çoğu, biraz da şanssızlıklarına bağlıdır.
    b. İnsanların talihsizlikleri kendi hatalarının sonucudur.

2. a. Savaşların başlıca nedenlerinden biri, halkın siyasetle yeterince ilgilenmemesidir.
    b. İnsanlar savaşı önlemek için ne kadar çaba harcarsa harcasın, her zaman savaş olacaktır.

3. a. İnsanlar bu dünyada hak ettikleri saygıyı er geç görürler.
    b. İnsan ne kadar çabalarsa çabalasın ne yazık ki değeri genellikle anlaşılmaz.

4. a. Öğretmenlerin öğrencilere haksızlık yaptığı fikri saçmadır.
    b. Öğrencilerin çoğu, notlarının tesadüfi olaylardan etkilendiğini fark etmez.

5. a. Koşullar uygun değilse insan başarılı bir lider olamaz.
    b. Lider olamayan yetenekli insanlar fırsatları değerlendirememiş kişilerdir.

6. a. Ne kadar uğraşsanız da bazı insanlar sizden hoşlanmazlar.
    b. Kendilerini başkalarına sevdiremeyen kişiler, başkalarıyla nasıl geçinileceğini bilmeyenlerdir.

7. a. Bir şey olacaksa eninde sonunda olduğuna sık sık tanık olmuşumdur.
    b. Ne yapacağıma kesin karar vermek kadere güvenmekten daima daha iyidir.

8. a. İyi hazırlanmış bir öğrenci için, adil olmayan bir sınav hemen hemen söz konusu olamaz.
    b. Sınav sonuçları derste işlenenle çoğu kez o kadar ilişkisiz oluyor ki, çalışmanın anlamı kalmıyor.

9. a. Başarılı olmak çok çalışmaya bağlıdır, şansın bunda payı ya hiç yoktur ya da çok azdır.
    b. İyi bir iş bulmak, temelde, doğru zamanda doğru yerde bulunmaya bağlıdır.

10. a. Hükümetin kararlarında sade vatandaş da etkili olabilir.
    b. Bu dünya güç sahibi bir kaç kişi tarafından yönetilmektedir ve sade vatandaşın bu konuda yapabileceği fazla bir şey yoktur.

11.a. Yaptığım planları yürütebileceğimden hemen hemen eminimdir.
    b. Çok uzun vadeli planlar yapmak her zaman akıllıca olmayabilir, çünkü birçok şey zaten iyi ya da kötü şansa bağlıdır.

12.a. Benim açımdan istediğimi elde etmenin talihle bir ilgisi yoktur.
    b. Çoğu durumda, yazı-tura atarak da isabetli kararlar verebiliriz.

13.a. Kimin patron olacağı, genellikle, doğru yerde ilk önce bulunma şansına kimin sahip olduğuna bağlıdır.
    b.İnsanlara doğru şeyi yaptırmak bir yetenek işidir, şansın bunda payı ya hiç yoktur ya da çok azdır.

14.a. Dünya meseleleri söz konusu olduğunda, çoğumuz anlayamadığımız ve kontrol edemediğimiz güçlerin kurbanıyızdır.
    b. İnsanlar siyasal ve sosyal konularda aktif rol alarak dünya olaylarını kontrol edebilirler.

15.a. Bir çok insan rastlantıların yaşamlarını ne derece etkilediğinin farkında değildir.
    b. Aslında 'şans' diye bir şey yoktur.

16.a. Bir insanın sizden gerçekten hoşlanıp hoşlanmadığını bilmek zordur.
    b. Kaç arkadaşınızın olduğu, ne kadar iyi olduğunuza bağlıdır.

17.a. Uzun vadede, yaşamınızdaki kötü şeyler iyi şeylerle dengelenir.
    b. Çoğu talihsizlikler yetenek eksikliğinin, ihmalin, tembelliğin ya da her üçünün birden sonucudur.

18.a. Yeterli çabayla siyasal yolsuzlukları ortadan kaldırabiliriz.
    b. Siyasetçilerin kapalı kapılar ardında yaptıkları üzerinde halkın fazla bir kontrolü yoktur.

19.a. Öğretmenlerin verdikleri notları nasıl belirlediklerini bazen anlayamıyorum.
    b. Aldığım notlarla çalışma derecem arasında doğrudan bir bağlantı vardır.

20.a. Çoğu kez başıma gelenler üzerinde çok az etkiye sahip olduğumu hissederim.
    b. Şans ya da talihin yaşamımda önemli bir rol oynadığına inanmam.

21.a. İnsanlar arkadaşça olmaya çalışmadıkları için yalnızdırlar.
    b. İnsanları memnun etmek için çok fazla çabalamanın yararı yoktur, sizden hoşlanırlarsa hoşlanırlar.

22.a Başıma ne gelmişse, kendi yaptıklarımdandır.
    b. Yaşamımın alacağı yön üzerinde bazan yeterince kontrolümün olmadığını hissediyorum.

23. a. Siyasetçilerin neden öyle davrandıklarını çoğu kez anlayamıyorum.
    b. Yerel ve ulusal düzeydeki kötü idareden uzun vadede halk sorumludur.

Phd – Questionnaire Locus of Control (Turkish version) updated Nov

Appendix G: Teaching-Learning Methods Instrument
Öğretme-Öğrenme Yöntemleri Aleti

Bu anket, doktora tez çalışmamın bir parçasıdır. Bu çalışmayı hazırlamamdaki amaç öğrencileri başarıya götürecek faktörleri belirleyerek öğrencilere, öğretim elemanlarına ve ailelere ışık tutmaktır. Verilen cevaplar HİÇBİR şekilde cevap verenleri bağlamadığı gibi kişisel olarak üçüncü şahıslara da aktarılmayacaktır.

Lütfen sorulacak sorularla ilgili önbilgiyi okuduktan sonra sorulara boş bırakılan kutuların arasında size en uygun olana çarpı işareti koyunuz.

Doktora öğrencisi: Nilgün Suphi   Advisor: Assist. Prof. Dr. Hüseyin Yaratan

Önbilgi

Sunuş Yoluyla Öğretim yöntemi: Bu yöntemde bir öğretmen/eğitici tarafından sunu yöntemi uygulanır. Anlatmak ve göstermek temeline dayanır. Dersin her basamağı öğretmen tarafından dersten önce planlanır ve bu plana uygun olarak anlatılır. Öğretmen otoriterdir. Öğretmen–öğrenci arasındaki diyalog genelde öğret-menden öğrenciye doğru tek yönlü olarak gerçekleşir. Öğrenciye söz hakkı verilip verilemeyeceğine öğretmen karar verir. Öğrenci pasif bir izleyici durumunda dahi olabilir. Öğretmen tarafından sözlü, yazılı, temsil yoluyla, resimle, modelle, gösteri yoluyla ve/veya müzikle yapılabilir. Öğretmen öğrenciye planlanmış bilgiyi belli bir sürede aktarması gerekir. Bu bilgi aktarımı için ayrılan ve her dakikası planlanmış süreye ders denir. (Terzi, C. Dr., Eryılmaz, M. Dr., Anadol, Z. Dr., & Kaya, F. Dr.,(2009). Sürekli Tıp Eğitimi Etkinlikleri, Tanımlar ve Özellikler.

Soru 1	Hiç	Biraz	Oldukça çok	Çok iyi
Yukarda açıklaması verilen **Sunuş Yoluyla Öğretim yöntemi hakkında** ne kadar bilginiz vardı?				

Önbilgi

Buluş Yoluyla Öğrenme: Öğrenciler kendi bilgilerini kendileri oluşturur. Öğretmen sadece katalizör vazifesi görür. Sınıf düzeni araştırma ve keşif yapmaya elverişlidir. Gerekli durumlarda tartışma yapabilecek bir düzene geçilebilmelidir. Öğretmen, cevaplamak için üst düzey düşünmeği gerektiren sorular sorar. Buluş yoluyla öğrenmenin amaçları öğrencilere bağımsız düşünme imkanı vererek onların bilgiye kendilerinin ulaşması; öğrencilerinin kendilerinin bilgiyi toplayıp inceleyip organize ederek bilginin nasıl oluştuğunu öğrenmeleri; öğrencilerin üst düzey becerilerinin gelişmesi; öğrencinin kendi bilişsel yapılarını en iyi kullanabilecekleri şekilde kendilerinin örgütlemesi. Buluş yoluyla öğrenmeyi içeren bir yöntem şu basamaklardan oluşabilir:

1. Öğrenciye soruşturma ve araştırma yapması için bir problem verilir.
2. Önemli genellemeler öğrenciden saklanır ve problemi öğrencinin kendisinin araştırmasına fırsat verilir.
3. Öğrenci kendisi, fenomenin oluşum sebeplerini keşfeder ve bulgularını daha önceki bilgileriyle ilişkilendirir.
4. Öğrenci genelleme yapar ve anladığını gösterir.
5. Öğrenci, genellemelere dayalı kavramları ve ilkeleri sözel olarak ifade eder.

Yukarda belirtilen öğrenme basamaklarını öğrencilerin gerçekleştirmesi için gerektiği zaman gerçekleştirebilmesi için bir zaman sınırlandırılması yoktur. Gerektiği durumlarda öğrenciler sınıf dışındaki mekanlarda da araştırma yapabilirler. Öğrenciden öğrenciye iletişim cesaretlendirilir, öğrenci-öğretmen iletişimi ise en alt düzeye çekilmesi için çaba harcanır. Dersler önceden tasarlanmış bir ders planına göre değil, öğrencilerin cevaplarına ve tepkilerine göre yönelir ve gelişir. Genellikle her ders öğrencilerin çözmeleri için bir problem (veya sorun) içerir.
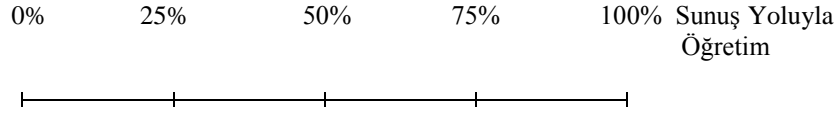
| Soru 2	Hiç	Biraz	Oldukça çok	Çok iyi
Yukarda açıklaması verilen **Buluş Yoluyla Öğrenme yöntemi hakkında** ne kadar bilginiz vardı?				

Soru 3

Lütfen ders kodun yanına verdiğiniz dersin ismini ve hangi gruba verdiğinizi yazınız. (Eğer birden fazla gruba veriyorsanız lütfen her grup için ayrı bir şema doldurunuz). Lütfen verdiğiniz her ders için bir şema doldurunuz.

Dersin kodu: .... **Dersin ismi:** .... **Grup no**.........................

Dersinizin yüzde kaçını **Sunuş Yoluyla Öğretim** yöntemini kullanarak verdiğinizi aşağıdaki çizgi üzerine işaretleyiniz.

| 0% | 25% | 50% | 75% | 100% | Sunuş Yoluyla Öğretim |

Dersinizin yüzde kaçını **Buluş Yoluyla Öğrenme** yöntemini kullanarak verdiğinizi aşağıdaki çizgi üzerine işaretleyiniz.

| 0% | 25% | 50% | 75% | 100% | Buluş Yoluyla Öğrenim |

Dersin kodu: .... **Dersin ismi:** .... **Grup no**.........................

Dersinizin yüzde kaçını **Sunuş Yoluyla Öğretim** yöntemini kullanarak verdiğinizi aşağıdaki çizgi üzerine işaretleyiniz.

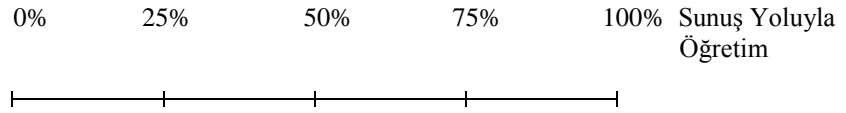| 0% | 25% | 50% | 75% | 100% | Sunuş Yoluyla Öğretim |

Dersinizin yüzde kaçını **Buluş Yoluyla Öğrenme** yöntemini kullanarak verdiğinizi aşağıdaki çizgi üzerine işaretleyiniz.

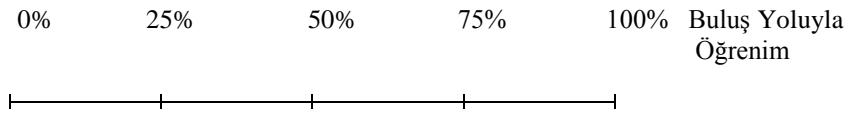| 0% | 25% | 50% | 75% | 100% | Buluş Yoluyla Öğrenim |
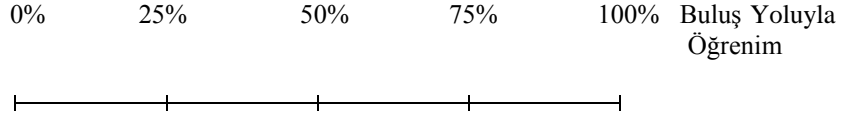
Öğrenme Düzeyini Belirleme Anketi *(Identifying Level of Learning Questionnaire)*

Bu anket, bir doktora tez çalışmasının bir parçasıdır. Bu çalışmayı hazırlamamdaki amaç öğrencileri başarıya götürecek faktörleri belirleyerek öğrencilere, öğretim elemanlarına ve ailelere ışık tutmaktır. Verilen cevaplar HİÇBİR şekilde cevap verenleri bağlamadığı gibi kişisel olarak üçüncü şahıslara da aktarılmayacaktır.

Lütfen ders kodun yanına verdiğiniz dersin ismini ve hangi gruba verdiğinizi yazınız. (Eğer bir den fazla gruba veriyorsanız lütfen her grup için ayrı bir form doldurunuz).

Dersin kodu: .... Dersin ismi: .... Grup no...............................

Bu ders için hazırlamış olduğunuz ölçme araçlarını hangi düzeyde hazırladığınızı belirtiniz.

Ödevler

Öğrenme Düzeyi	Açıklaması	Hiç/ Nere-deyse hiç	Bazen	Yarı yarıya	Genel-likle	Herzaman/ neredeyse herzaman
Bilgi	Tanımlama, sınıflandırma, yerleştirme, taslak haline getirme, örnek verme, listeleme, isimlendirme, eşleştirme, seçme, gösterme, hatırlama.					
Kavrama	Özetleme, yorumlama, anlatma, açıklama, karşılaştırma, dönüştürme, ayırt etme, başka şekillerde ifade etme, yeniden yazma, tercüme etme.					
Uygulama	Uygulama, resimleme, çözme, hesaplama, manipule etme.					
Analiz	Analiz etme, verilen bir bütünü parçalarına ayırabilme, inceleme, sorgulama, şemalaştırma, zıtlıkları belirleme, kategorize etme.					
Sentez	Verilen parçaları bir bütün haline getirme, tasarım yapma, yapılandırma, yeniden düzenleme, organize etme.					
Değerlendirme	Değer biçme, yargılama, eleştirme, kanıtlama, tartışma, takdir etme.					

Proje

Öğrenme Düzeyi	Açıklaması	Hiç/ Nere- deyse hiç	Bazen	Yarı yarıya	Genel- likle	Herzaman/ neredeyse herzaman
Bilgi	Tanımlama, sınıflandırma, yerleştirme, taslak haline getirme, örnek verme, listeleme, isimlendirme, eşleştirme, seçme, gösterme, hatırlama.					
Kavrama	Özetleme, yorumlama, anlatma, açıklama, karşılaştırma, dönüştürme, ayırt etme, başka şekillerde ifade etme, yeniden yazma, tercüme etme.					
Uygulama	Uygulama, resimleme, çözme, hesaplama, manipule etme.					
Analiz	Analiz etme, verilen bir bütünü parçalarına ayırabilme, inceleme, sorgulama, şemalaştırma, zıtlıkları belirleme, kategorize etme.					
Sentez	Verilen parçaları bir bütün haline getirme, tasarım yapma, yapılandırma, yeniden düzenleme, organize etme.					
Değerlendirme	Değer biçme, yargılama, eleştirme, kanıtlama, tartışma, takdir etme.					

Sınav

Öğrenme Düzeyi	Açıklaması	Hiç/ Nere- deyse hiç	Bazen	Yarı yarıya	Genel- likle	Herzaman/ neredeyse herzaman
Bilgi	Tanımlama, sınıflandırma, yerleştirme, taslak haline getirme, örnek verme, listeleme, isimlendirme, eşleştirme, seçme, gösterme, hatırlama.					
Kavrama	Özetleme, yorumlama, anlatma, açıklama, karşılaştırma, dönüştürme, ayırt etme, başka şekillerde ifade etme, yeniden yazma, tercüme etme.					
Uygulama	Uygulama, resimleme, çözme, hesaplama, manipule etme.					
Analiz	Analiz etme, verilen bir bütünü parçalarına ayırabilme, inceleme, sorgulama, şemalaştırma, zıtlıkları belirleme, kategorize etme.					
Sentez	Verilen parçaları bir bütün haline getirme, tasarım yapma, yapılandırma, yeniden düzenleme, organize etme.					
Değerlendirme	Değer biçme, yargılama, eleştirme, kanıtlama, tartışma, takdir etme.					

Yukardaki ölçme yöntemlerinden farklı yöntemler kullanıyorsanız lütfen aşağıdaki tabloları kullanarak belirtiniz ve düzeyini işaretleyiniz.

Ölçme Aracı: ………………………………………………………………………………………………………

Öğrenme Düzeyi	Açıklaması	Hiç/ Nere- deyse hiç	Bazen	Yarı yarıya	Genel- likle	Herzaman/ neredeyse herzaman
Bilgi	Tanımlama, sınıflandırma, yerleştirme, taslak haline getirme, örnek verme, listeleme, isimlendirme, eşleştirme, seçme, gösterme, hatırlama.					
Kavrama	Özetleme, yorumlama, anlatma, açıklama, karşılaştırma, dönüştürme, ayırt etme, başka şekillerde ifade etme, yeniden yazma, tercüme etme.					
Uygulama	Uygulama, resimleme, çözme, hesaplama, manipule etme.					
Analiz	Analiz etme, verilen bir bütünü parçalarına ayırabilme, inceleme, sorgulama, şemalaştırma, zıtlıkları belirleme, kategorize etme.					
Sentez	Verilen parçaları bir bütün haline getirme, tasarım yapma, yapılandırma, yeniden düzenleme, organize etme.					
Değerlendirme	Değer biçme, yargılama, eleştirme, kanıtlama, tartışma, takdir etme.					

Zaman ayırdığınız için çok teşekkür ederiz

Revised Study Process Questionnaire (R-SPQ-2F)

This questionnaire has a number of questions about your attitudes towards your studies and your usual way of studying. There is no *right* way of studying. It depends on what suits your own style and the course you are studying. It is accordingly important that you answer each question as honestly as you can. If you think your answer to a question would depend on the subject being studied, give the answer that would apply to the subject(s) most important to you.

Please fill in the appropriate circle alongside the question number on the "General Purpose Survey/Answer Sheet". The letters alongside each number stand for the following response.

A — this item is *never* or *only rarely* true of me
B — this item is *sometimes* true of me
C — this item is true of me about *half the time*
D — this item is *frequently* true of me
E — this item is *always* or *almost always* true of me

Please choose the *one* most appropriate response to each question. Fill the oval on the Answer Sheet that best fits your immediate reaction. Do not spend a long time on each item: your first reaction is probably the best one. Please answer each item.
Do not worry about projecting a good image. Your answers are CONFIDENTIAL.

Thank you for your cooperation.

1. I find that at times studying gives me a feeling of deep personal satisfaction.
2. I find that I have to do enough work on a topic so that I can form my own Conclusions before I am satisfied.
3. My aim is to pass the course while doing as little work as possible.
4. I only study seriously what's given out in class or in the course outlines.
5. I feel that virtually any topic can be highly interesting once I get into it.
6. I find most new topics interesting and often spend extra time trying to obtain more information about them.
7. I do not find my course very interesting so I keep my work to the minimum.
8. I learn some things by rote, going over and over them until I know them by heart Even if I do not understand them.
9. I find that studying academic topics can at times be as exciting as a good novel or movie.
10. I test myself on important topics until I understand them completely.
11. I find I can get by in most assessments by memorising key sections rather than trying to understand them.
12. I generally restrict my study to what is specifically set as I think it is unnecessary to do anything extra.

13. I work hard at my studies because I find the material interesting.
14. I spend a lot of my free time finding out more about interesting topics which have been discussed in different classes.
15. I find it is not helpful to study topics in depth. It confuses and wastes time, when all you need is a passing acquaintance with topics.
16. I believe that instructors shouldn't expect students to spend significant amounts of Time studying material everyone knows won't be examined.
17. I come to most classes with questions in mind that I want answering.
18. I make a point of looking at most of the suggested readings that go with the lectures.
19. I see no point in learning material which is not likely to be in the examination.
20. I find the best way to pass examinations is to try to remember answers to likely questions.

Scoring is in the following cyclical order:

1. Deep Motive, 2. Deep Strategy, 3. Surface Motive, 4. Surface Strategy
5. " etc.

Deep Approach Score: Σ All Deep Motive scores + all Deep Strategy scores
Surface Approach Score: Σ All Surface Motive scores + all Surface Strategy scores

Appendix J: Permission to Translate and Use R-SPQ-2F from Prof. Biggs

Dear Nilgun,

No I donlt known of any translations into Tuyrkish, but Dr. Kember may. In either event, I am perfectly happy for you to translate it, as lond as it is acknowledged in the usual way.

Sincerely

John Biggs
PO Box 1083
SANDY BAY,
Tas 7006
Website: www.johnbiggs.com.au
Phone: (03) 6225 2257

----- Original Message -----

From: Nilgun Suphi

To: jbiggs@bigpond.com ; dkember@hkucc.hku.hk

Sent: Monday, July 13, 2009 10:22 PM

Subject: R-SPQ-2F

Dear Prof. Dr. John Biggs and Prof. Dr. Kember,

First of all I would like to begin by saying how much I have enjoyed reading your many articles with great interest.

I am a lecturer and a PhD student in the Educational Sciences Program in the Eastern Mediterranean University situated in North Cyprus. I am interested in using the R-SPQ-2F in my research. I am contemplating translating it into Turkish. Do you know of any Turkish translation that has been tested for validity and reliability? If not I would like to ask for permission to translate and use your questionnaire.

I look forward to your reply and remain,

yours faithfully,

Nilgün Suphi
PhD Student,
Educational Sciences,
Eastern Mediterranean University.

Appendix K: Permission to Translate and Use R-SPQ-2F from Prof. Kember

Dear Nilgun,

I do not know of any translations into Turkish. I also am happy for you to translate and use it.

Kind regards,

David Kember

Quoting John Biggs <jbiggs@bigpond.com>:

> Dear Nilgun,
> No I donlt known of any translations into Tuyrkish, but Dr. Kember may. In
> either event, I am perfectly happy for you to translate it, as lond as it is
> acknowledged in the usual way.
>
> Sincerely
> John Biggs
> PO Box 1083
> SANDY BAY,
> Tas 7006
> Website: www.johnbiggs.com.au
> Phone: (03) 6225 2257

Appendix L: Turkish Translation of the R-SPQ-2F

BİGGS VE KEMBER'İN GÖZDEN GEÇİRİLMİŞ 2 FAKTÖRLÜ DERS ÇALIŞMA SÜRECİ ANKETİ The Revised Two-factor Study Process Quesionnaire: (R-SPQ-2F) (BIGGS, J. Kember, D. & Leung, Y. P. 2001) Bu ankette ders çalışmalarınız ve genel çalışma şeklinizle ilgili tutumlarınız hakkında sorular vardır. Ders çalışmanın tek bir **DOĞRU** yolu yoktur. Çalışma şekli kendi stilinize ve aldığınız derse bağlıdır. Bundan dolayı her soruyu olabildiğince kadar dürüst cevaplandırmanız önemlidir. Bir soruya vereceğiniz cevap çalıştığınız konuya bağlı olduğunu düşünüyorsanız, cevabınızı en çok önemsediğiniz konulara/konulara uygun olarak veriniz. Lütfen cevap kağıdı üzerinde bulunan soru numarasının hizasındaki uygun yuvarlağı kurşun kalemle doldurunuz. Her numaranın yanındaki harfler aşağıdaki cevabı simgeler. A - Benim için **hiç/neredeyse hiç** doğru değildir B – Benim için **biraz** doğrudur C – Benim için **yarı yarıya** doğrudur D – Benim için **oldukça** doğrudur E – Benim için **çok/tam** doğrudur Lütfen her soruya en uygun olan tek **BİR** cevap seçiniz. Cevap kağıdındaki dairelerden ilk aklınıza en uygun geleni doldurunuz. Hiçbir madde üzerinde uzun zaman harcamayınız: ilk aklınıza gelen muhtemelen en uygun olandır. Lütfen her maddeye cevap veriniz. İyi bir imaj sergilemek için kaygılanmayınız. Cevaplarınız **GİZLİ TUTULACAKTIR**. İşbirliğiniz için teşekkür ederim.	Hiç/neredeyse hiç doğru değildir	Biraz doğrudur	Yarı yarıya doğrudur	Oldukça doğrudur	Çok/tam doğrudur
1. Ders çalışmanın bana bazen derin kişisel tatmin hissi verdiğini fark ediyorum.					
2. Bir konu üzerinde tatmin olmadan önce o konu üzerinde yeteri kadar çalışarak kendi sonuçlarıma varmam gerektiğini fark ediyorum.					
3. Amacım dersi, mümkün olduğunca az çalışarak geçmektir.					
4. Sadece derste veya ders proğramında (course outline) verilenleri çalışırım.					
5. İçine girdikten sonra neredeyse her konunun çok ilgi çekici olabildiğine inanıyorum.					
6. Çoğu yeni konuları ilgi çekici bulurum, ve çoğu kez bu konular hakkında daha fazla bilgi almak için ek zaman harcarım.					
7. Dersimi fazla ilgi çekici bulmuyorum, bu sebeple dersime çalışmayı en düşük düzeyde tutarım.					
8. Bazı şeyleri kuru ezber olarak öğrenirim, yani onların üzerinden defalarca geçerek anlamasam bile ezberlerim.					
9. Akademik konulara çalışmanın bazen iyi bir roman veya film kadar heyecanlı olabileceğini düşünüyorum.					
10. Önemli konuları tam anlayana kadar kendi kendimi sınarım.					
11. Ana kısımları anlamak için çabalamak yerine ezberleyerek çoğu sınavı geçebileceğimi fark ediyorum.					
12. Genelde, dersime çalışmayı özel olarak istenilenlerle sınırlandırırım, çünkü daha fazlasını yapmanın gereksiz olduğunu düşünüyorum.					
13. Bu dersime çok yoğun çalışıyorum, çünkü konuları ilgi çekici bulurum.					
14. Boş zamanlarımın çoğunu derslerde tartışılan ilgi çekici konular hakkında daha fazla bilgi edinmek için harcarım.					
15. Konuları derinliğine çalışmanın ümit verici <u>olma**dığı**</u>na inanıyorum. Tek ihtiyacın konuları geçecek kadar bilmek iken, derinliğine çalışmak kafa karıştırır ve boşa zaman harcatır.					
16. Bazı konuların sınava dahil edilmeyeceği herkes tarafından bilinmektedir. O halde, öğretim elemanları bu gibi konular üzerinde öğrencilerin hatırı sayılır zaman harcamalarını <u>bekle**ME**meleri</u> gerektiğine inanıyorum.					
17. Çoğu kez sınıfa kafamda cevaplanmasını istediğim sorularla gelirim.					
18. Dersim ile ilgili okunması önerilen konulara bakmaya özen gösteririm.					
19. Sınavda gelmesi ihtimali <u>olma**ya**n</u> konuların öğrenilmesini gereksiz buluyorum.					
20. Sınavda gelmesi ihtimali olan soruların cevaplarını hatırlamaya çalışmanın sınavları geçmenin en iyi yolu olduğunu düşünüyorum.					

STUDY BEHAVIOR INVENTORY

Leonard B. Bliss

College/Adult
Learning Specialists

This survey is designed to find out what study habits and skills you have developed at this stage of your college career. Knowing the results of this inventory can help students develop better and more productive ways to study and can help teachers do a better job of teaching.

All information in this survey will be kept in the strictest confidence, so please be frank and honest in your answers.

The following is a list of statements of habits and attitudes which may affect the use of study time and consequent success in school work and study. Please state your habits with regard to these items, <u>not</u> in accordance with what you think you should do or not do, or what you see other do, but in accordance with what you yourself are in the habit of doing. Please answer all questions.

After each statement, you will find columns 1, 2, 3, and 4. Mark each item by checking (√) the space in column 1, 2, 3, or 4 — whichever better describes your behavior. Remember, this is a survey of your present habits and attitudes of study. Check each item in accordance with the following key:

Column 1: Rarely or never true in my case.

Column 2: Sometimes true in my case.

Column 3: Often or usually true in my case.

Column 4: Always or almost always true in my case.

DO NOT WRITE IN THIS SPACE

I. GENERAL STUDY ATTITUDES AND BEHAVIORS

		1	2	3	4		T	FI	F2	F3

1. My time is unwisely distributed; I spend too much time on some things and not enough on others…………………………………

    ____ ____ ____ ____   ____   ____

2. I find it hard to force myself to finish work by a certain time; work is unfinished, inferior, or not on time………………………………

    ____ ____ ____ ____   ____   ____

3. With some of my courses I like to study with others………………

    ____ ____ ____ ____   ____

4. I complete my homework assignments on time……………………

    ____ ____ ____ ____   ____   ____

5. I try to carry over and relate material learned in one course to that learned in others……………………………………………

    ____ ____ ____ ____   ____   ____

6. I copy the diagrams, drawings, tables, and other illustrations that the instructor puts on the blackboard………………………………

    ____ ____ ____ ____   ____

7. I keep my assignments up-to-date by doing my work regularly from day to day……………………………………………….

    ____ ____ ____ ____   ____   ____

Column 1: Rarely or never true in my case.   **Column 3:** Often or usually true in my case.

Column 2: Sometimes true in my case.   **Column 4:** Always or almost always true in my case.

WRITE

SPACE

	1	2	3	4		T	FI	F2	F3
	____	____	____	____		____			

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8. I prefer to study alone rather than with others………………………..

9. At the beginning of a study period, I organize my work so that I will utilize the time more effectively……………………………   ____ ____ ____ ____   ____   ____

10. When I am having difficulty with my schoolwork I try to talk over the trouble with my teacher……………………………………..   ____ ____ ____ ____   ____   ____

11. In preparing reports, themes, term papers, etc., I make certain that I clearly understand what is wanted before I begin to work………   ____ ____ ____ ____   ____   ____

12. When I get behind in my schoolwork for some unavoidable reason, I make up back assignments without prompting from the teacher…………………………………….   ____ ____ ____ ____   ____   ____

13. Difficulty in expressing myself in writing slows me down on reports, themes, examinations, and other work to be turned in……   ____ ____ ____ ____   ____ ____

14. My teacher criticizes my written reports as being hastily written or poorly organized……………………………………………   ____ ____ ____ ____   ____   ____

15. I set aside returned examinations, reports, and homework assignments without bothering to correct errors noted by the instructor……………………………………………   ____ ____ ____ ____   ____   ____

16. My studying is done in a random, unplanned manner impelled mostly by the demands of approaching classes…………………….   ____ ____ ____ ____   ____   ____

17. I try to do some "over-learning" — working beyond the point of immediate memory or recall……………………………………   ____ ____ ____ ____   ____   ____

18. I put off writing themes, reports, term papers, etc., until the last minute…………………………………………… _____ _____ _____ _____   _____   _____

19. I watch too much television, and this interferes with my studies…. _____ _____ _____ _____   _____   _____

20. I work too many hours for the course load I am carrying…………. _____ _____ _____ _____   _____

21. Personal problems with my family affect my ability to concentrate on studying…………………………………………… _____ _____ _____ _____   _____ _____

Column 1: Rarely or never true in my case.   **Column 3:** Often or usually true in my case.

Column 2: Sometimes true in my case.   **Column 4:** Always or almost always true in my case.

<table>
<tr><td></td><td colspan="7" align="center">**DO NOT WRITE IN THIS SPACE**</td></tr>
</table>

READING, WRITING AND NOTE-TAKING TECHNIQUES

	1	2	3	4	T	FI	F2	F3
22. I have to re-read material several times — the words don't have much meaning the first time I go over them………………………	___	___	___	___	___	___		
23. I try to summarize, classify, and systematize facts learned, associating them with previously learned materials and facts……..	___	___	___	___	___		___	
24. I skip over the figures, graphs, and tables in a reading assignment..	___	___	___	___	___		___	
25. After reading several pages of an assignment, I am unable to recall what I just read……………………………………………..	___	___	___	___	___	___		
26. When in doubt about the proper form for a written report, I refer to an approved model to provide a guide to follow…………………….	___	___	___	___	___			
27. When reading a long textbook assignment, I stop periodically and mentally review the main points that have been presented………...	___	___	___	___	___		___	

28. When writing down notes from a lecture, I have trouble picking out the important points. I tend to put down material that turns out to be unimportant…………………… ____ ____ ____ ____ ____ ____

29. After a class lecture, I go back and recite to myself the material in my notes – rechecking points I found doubtful……………………. ____ ____ ____ ____ ____ ____

30. I keep all the notes for each subject together carefully arranging them in some logical order……………………………………… ____ ____ ____ ____ ____ ____

31. Before attending class, I prepare by reading or studying the assignment……………………………………………………. ____ ____ ____ ____ ____ ____

III. COPING WITH EXAMINATIONS

32. I get nervous and confused when taking an examination and fail to answer questions to the best of my ability………………………… ____ ____ ____ ____ ____ ____

33. I do poorly on tests because I find it hard to think clearly and plan my work when I am faced with an exam………………………….. ____ ____ ____ ____ ____ ____

34. I have difficulty in picking out important points of a reading assignment – points that later appear on examinations……………. ____ ____ ____ ____ ____ ____

Column 1: Rarely or never true in my case.　　**Column 3:** Often or usually true in my case.

Column 2: Sometimes true in my case.　　**Column 4:** Always or almost always true in my case.

	1	2	3	4	T	FI	F2	F3
35. I lose points on true-false or multiple-choice examinations because I change my original answer only to discover later that I was right the first time…………………………………………………..	___	___	___	___	___	___		
36. I plan out in my mind the answer to subjective or essay-type examination questions before starting to write the answer………..	___	___	___	___	___			___
37. When preparing for an examination, I learn facts in some logical order of importance, order of presentation in class or textbook, order in history, etc…………………………………………..	___	___	___	___	___			___
38. I am careless with spelling and mechanics of English composition when answering examination questions……………………………	___	___	___	___	___			___
39. Although I work until the last possible minute, I am unable to finish examination within the allotted time………………………..	___	___	___	___	___	___		
40. If time is available, I take a few minutes to check over my answers before turning in my examination paper……………	___	___	___	___	___			

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41. When tests are returned, I find my grade has been lowered because of careless mistakes…………………………………………….. ___ ___ ___ ___ ___ ___

42. During an examination, I forget names, dates, formulas, and other details that I really do know……………………………………….. ___ ___ ___ ___ ___ ___

43. I believe that grades are based upon a student's ability to memorize facts rather than upon the ability to "think things through"…………………………………………………………. ___ ___ ___ ___ ___

44. I study harder for final exams than for the rest of my coursework... ___ ___ ___ ___ ___

45. I think I would do much better on tests if I could take them alone and/or not feel pressured by a time limit………………………….. ___ ___ ___ ___ ___ ___

46. Worry about how well I will do interferes with my preparation and performance on tests……………………………………………. ___ ___ ___ ___ ___ ___

Name_____

	T	FI	F2	F3
TOTALS				

Date_____ ___ ___ ___ ___

Appendix N: Permission to Use the Study Behavior Inventory (Bliss, 1987)

You are certainly welcome to use the Study Behavior Inventory in your research. However, you should be aware that translating such a survey is a difficult thing to do. A number of years ago, while I was a visiting professor at a Mexican university, one of my students did such a translation and validated the instrument for her thesis research. She assembled a team of Spanish language, English language, a measurement experts at the university and it took them over 24 hours of work to make a translation they could all agree on. In fact, it took them over four hours to come up with a translation of the directions! The second point is that such a translation used in a culture different from the one where the original was constructed will more often than not come up with a different factor structure than the original instrument when factor analysis is used for validation. If you haven't seen it, you should obtain our article on this effort:

Bliss, L. B., & Vinay, D. M. A. (2004). First Steps in the Development of the Inventario de Comportamiento de Estudio: The Spanish Version of the Study Behavior Inventory. Journal of Latinos and Education, 3, 25-37.

Scoring the SBI is not simple. You must get scores for each of the factors separately and a number of the items refer to negative behaviors so the scores for these items must be reversed. We are no longer marketing or supporting the computerized version of the instrument, but we do have a computerized scoring program. You would have to key in the responses, but the system scores them and gives a percentile rank based on a large sample of U.S. college and university students (which would not be very useful to you).   I will try to email the program to you under a following email.

I have attached a copy of the SBI to this message. I wish you good luck in your research.

Leonard B. Bliss, Ph.D.
Professor, Program of Educational and Psychological Studies
College of Education, Florida International University, Miami, Fl 33199, USA
_____
From: Nilgun Suphi [nilgun.suphi@emu.edu.tr]
Sent: Sunday, December 13, 2009 8:19 AM
To: Leonard Bliss
Subject: Study Habits Inventory

Dear Professor Leonard Bliss,
I am a PhD student and Lecturer in the Eastern Mediterranean University in North Cyprus (Educational Sciences Program). Part of my research for my PhD entails the study habits of university students. I have found your 'The Study Behavior Inventory - Form HS' and am writing to ask permission to translate it into Turkish and use the Turkish version for research purposes. I will, of course, cite your work accordingly.

I would be grateful to receive information on how scoring should be done for this inventory.

Thanking you, I look forward to receiving your reply and remain,

yours sincerely,

Appendix O: Example of PowerPoint slides of 101 Items Used in Actual Study

Appendix P: Permission from Rectorate to Administer Questionnaires

EBB

doğu akdeniz üniversitesi	eastern mediterranean university	İç Yazışma 250/503/4213

Inter-Office Memorandum

Gönderilen/To : Rektörlük Makamına
Akademik İşler

Tarih/Date : 25/10/2010

Gönderen/From : Prof. Dr. Necdet OSAM
Eğitim Fakültesi Dekanı

Sayı/Ref No : 0A/503/1101

0A/503/1101-3383

Konu/Subject : Araştırma hk.

Bilgisayar ve Teknoloji Yüksek Okulu Öğretim Görevlisi ve ayni zamanda Eğitim Bilimleri Doktora Programı Öğrencisi Nilgün Suphi (046050), "öğrenci başarısını etkileyen etmenler" konusunda bir araştırma desenlemiştir. Araştırma verilerini ekte sunulan bilgi toplama aracını Eğitim Fakültesi'nde *EGIT216 Bilimsel Araştırma Yöntemleri, EGIT321 Sınıf Yönetimi ve EGIT421 Eğitim Yönetimi* derslerini alan öğrencilere uygulayarak toplayacaktır.

Nilgün Suphi'nin araştırmanın bilgi toplama aracını Eğitim Fakültesi'nde yukarıda belirtilen derslerde uygulayabilmesi için gerekli iznin verilmesini bilgi ve onayınıza saygılarımla sunarım.

PÖ
İlgili öğretim elemanına duyurulum
2.11.2010

Sn Eğitim Fakültesi Dekanı

İlgili araştırma çalışmasının belirtilen dersleri alan öğrencilere uygulanmasında bir sakınca yoktur. Bilgi ve geçeği lütfen.

Prof. Dr. Bekir ÖZER
Eğitim Bilimleri Bölümü Başkanı

Department of
Educational Sciences
Eastern Mediterranean University
RECEIVED
DATE : 2.11.10
NO. : 304
REKTÖR YARDIMCISI
AKADEMİK İŞLER
Tarih: 27.10.2010 BÖ/pö
Sayı: ....
ALINDI

Ek: Araştırmanın bilgi toplama aracı.

Prof. Dr. Osman YILMAZ
Rektör Vekili / Acting Rector
27/10/2010

EASTERN MEDITERRANEAN UNIVERSITY FACULTY OF EDUCATION RECEIVED Date : 01.11.10 No. : 1698	EASTERN MEDITERRANEAN UNIVERSITY FACULTY OF EDUCATION RECEIVED Date : 26.10.10 No. : 1669