# Interrelationships of Approach to Studying, Time Management Skill, Motivation and Academic Performance among Mizan-Tepi University Students

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## ABSTRACT

The major purpose of this study was to examine interrelationships of approach to studying, time management skill, motivation and academic performance. Questionnaire and interview were used to gather data from a random sample of 220 (103 male and 117 female) second year Mizan-Tepi University students. Correlational and regression analysis, factor analysis, ANOVA and t-test were used to analyze quantitative data. Statistically significant relations were found among approach to studying, time management skill and academic performance ($P<.01$). Approach to studying, time management skill and motivation accounted for the largest proportion of the variance (Adjusted $R^2 = .28$) in academic performance. Regardless of gender, ANOVA revealed statistically significant difference in academic performance between deep and surface, and intrinsic motivation and amotivation predominant students. Also students who were predominant in making and following a schedule and in organized use of their time obtained significantly higher CGPAs than those who tended to procrastinate. Results of data obtained through interview indicated that the students adopted the strategic approach to studying more often, varied in their time management skills and had self-determined motivational orientation. It was concluded that approach to studying, time management skill and motivation were closely related variables that play vital roles in academic performance. Practical implications of the findings were discussed.

# TABLE OF CONTENTS

**CONTENT** **PAGE**

## LIST OF TABLES

**TABLE** **PAGE**

## ACRONYMS

- APTS - Approach to Studying
  - → DP - Deep Approach to Studying
  - → STR - Strategic Approach to Studying
  - → SUR - Surface Approach to Studying
- TMS -Time Management Skill
  - → MFS - Making and Following a Schedule
  - → BOUT - Being Organized in Using Time
  - → PUTP - Perceived Use of Time to be Purposive
  - → PRO - Procrastination
- MO - Motivation
  - → AMO - Amotivation
  - → EXMO - Extrinsic Motivation
  - → INMO - Intrinsic Motivation
- ASSIST - Approaches and Study Skills Inventory for Students
- TMSC - Time Management Scale
- AMS - Academic Motivation Scale
- TMBS - Time Management Behavior Scale
- AP - Academic Performance
- CGPA - Cumulative Grade Point Average
- CRLI - Center for Research on Learning and Instruction
- SDT - Self-determination Theory

# CHAPTER ONE
# INTRODUCTION

## 1.1 Background of the Study

Education is a keystone to the whole social structure, for only if it functions properly can all other institutions continue to serve the needs of the society. An educational system consists of many parts that are intended to facilitate the optimum development of the students. This development depends on the quality of learning that takes place within the system. Quality of education determines the future of any social system (Eson, 1972).

However, in recent years, education has frequently been blamed because graduates are not sufficiently able to apply their knowledge to solve problems in a working context. Regarding this, Nettles and Nettles (1997) assert that schools are under constant criticisms because of their apparent failure to identify the special abilities of their students and to challenge these students to greater efforts. This led to failure to produce the educated citizenry needed for the nation to remain competitive in a global economy. Although quantitative literacy, critical thinking and problem solving skills are increasingly in demand in the work place, students are leaving schools unprepared for this future. Higher education institutions are not exceptional to this problem. Dochy (2005) contends that the development and implementation of instructional practices that fosters students' skills to communicate, think and reason effectively, make judgments about the accuracy of masses of information, solve problems and work collaboratively in diverse teams are important challenges for today's higher education.

The continuous improvement of the quality of teaching and learning is one of the key goals of universities endeavoring to fulfill their obligations as learning institutions. Arambewela, Mulready and Callaghan (2007) argue that the issue of quality improvement requires a major adjustment on the part of the institutions given the increasing diversity of the student population and changing demands of students from different cultural and ethnic backgrounds. Improving the quality of learning requires a better understanding of what happens in the learning process from the perspective of the learner (Zeegers, 2004).

Traditionally, it has been assumed that there basically has been one correct way for any student to go about learning. This belief was reflected in the reading method SQ3R (Survey, Question, Read, Recall, Review) which was described in many study skills manuals (Watkins, 1986). More recently, it has been recognized that there is no single best way of learning or studying. Supporting this, Shute (1994) claims, "Learning, the acquisition of knowledge and skills, is generally regarded as a constructive activity. The construction, however, can assume many forms. Individuals differ in how they learn (process) as well as what they learn (outcomes)." Thus, it was found out that SQ3R study skills programs were often ineffective and not valid predictors of academic achievement (Gibbs, 1981 cited in Watkins, 1986). Consequently, educational psychologists and researchers have become increasingly concerned with teaching higher order thinking skills, problem solving and learning strategies.

According to Goh (2005), around 1960s much educational research into student learning tended to be concentrated on the relationships between memory, oral and visual teaching methods with very little attention directed at individual differences or changes in learning that might take place. However, Entwistle (1992) declared that a new area of research in Europe and Australia has been exploring student learning and has developed sets of categories used to construct descriptions of learning firmly rooted in the experiences of students. One starting point was a series of learning experiments carried out by Ference Marton and his colleagues at University of Gothenburg, Sweden (Marton & Saljo, 1976a; 1976b). Using realistically complex learning materials and interview, Marton and Saljo distinguished between deep and surface approaches to learning an academic article. These researchers studied learning from phenomenographic point of view. Phenomenography is a perspective that stresses the importance of looking at learning processes that happen in the natural situation of learning within everyday learning tasks, for example, reading text materials.

On the other hand, from the levels of processing view (developed by Craik & Lockhart, 1972 cited in Houston, 1986), memory is seen as an active process in which information is analyzed at various levels and later reconstructed. This view argues that the rapid forgetting of a material is due to the shallow analysis made to it. The view also contends that the

persistence of information in the long-term memory is related to the deeper level of processing it receives. According to this perspective, information is transformed into a memory code based on meaning. For instance, thinking about what something means is a more complex and difficult cognitive task than analyzing the information into acoustic code (Houston, 1986; Grasha, 1995). Entwistle (1992) suggests that such complex and deep approach to learning is likely to make the students' work more interesting. He also indicated that students adopting the deep approach to studying put in longer hours of independent studying. This is because, according to Grasha (1995), processing information to a deeper level requires spending time to attach relevant semantic and imagery codes. This can occur automatically, or the students might need to consciously force themselves to do it.

However, modern college students are required to manage a varied array of academic assignments in varied subject areas. Some students may have to manage their time between studying for multiple tests, completing assignments, papers and projects. In spite of all of these academic activities to be completed within a short period of time (perhaps three or four months of a semester), research has already revealed that a phenomenon called procrastination among college students throughout the world occurs at alarmingly high rates. Some estimates put the incidence rate of procrastination in college students between 80% and 95% (Morford, 2008). This shows that the students lack effective time management skills. Procrastination is a behavior in which an individual leaves a feasible, important deed planned beforehand to another time without any sensible reason (Balkis & Duru, 2009). Mcwhorter (1996) claims that effective time management can make the difference between being a mediocre student and being an excellent one. Time management can also determine whether students feel as if they should spend every walking moment studying or whether they are confident about their courses and know that they can afford time for fun and relaxation. Thus, in a university, given that so many academic activities are to be completed in a short period of time, students must possess the skills of planning their time, implementing their plans and avoiding procrastination.

On the other hand, human beings in general and students in particular can be proactive and engaged or passive and alienated in managing their time and approaching learning mainly

depending on their motivation. Pintrich and Schunk (2002) indicate that motivation can influence what, when and how we learn. They further contend that students who are motivated to learn a topic are apt to engage in activities they believe will help them. These activities include attending carefully to instruction, mentally organizing and rehearsing the material to be learned, taking notes to facilitate subsequent studying, checking their level of understanding and asking for help when they do not understand the material; which collectively improve learning. In contrast, according to Schunk (1991) cited in Pintrich and Schunk (2002), students unmotivated to learn are not apt to be systematic in their learning efforts. They may be inattentive during the lesson and do not organize or rehearse material. Note taking may be done haphazardly or not at all. They may not monitor their level of understanding or ask for help when they do not understand what is being taught. A key point, according to Pintrich and Schunk, is that motivation bears a reciprocal relation to learning and performance. That is, motivation influences learning and performance and what students do and learn influences their motivation.

Beckwith (1991) points out that students with a surface approach reputedly focus on facts, emphasize reproduction of essential information, and rely on extrinsic motivators. The surface approach to learning has certain similarities with the directive, empirically based educational philosophy of behavioral teachers. Students who adopt a deep approach, Beckwith adds, are reputedly engaged in search for meaning, as part of which they relate new material to old and facts to conclusions. They are seen as primarily motivated by intrinsic factors and interest in the material. In the same manner, Siddiqui (2006) contends that students who assume a deep approach to their learning are intrinsically motivated and search for meaning by integrating new information into existing knowledge. But surface learners are extrinsically motivated (largely by grades) and have a reproductive conception of learning. Cohen, Manion and Morrison (2004) assert that a key factor in improving deep learning is motivation. However, this motivation, unlike behaviorism, is intrinsic, socially rooted, promotes autonomy and self-esteem, breaks learned helplessness, and is significant learning. Sheldon, Abad and Omoile (2009) claim that better school performance is associated with intrinsic motivation and greater need satisfaction.

Thus, it can be argued that quality of learning at a university is influenced by a number of factors including students' approach to learning or studying, motivation and time management skill. Indicators of quality of learning are difficult to develop and extensive to collect. But a substantial amount of research (e.g., Prosser & Triggwell, 1990) has shown that the quality of student learning is related to the quality of their approach to learning. That is, research shows that most students who have attained a high quality learning outcome have also adopted a high quality approach to their learning. Furthermore, Cohen et al. (2004) suggest that effective learning is deep learning, marked by deliberate intention to learn.

Students reach the deep level of processing required for high quality learning outcomes in several different ways. These ways may depend on the particular context of learning, on the motivation of the students and their conception of their own learning (Watkins, 1986). Moreover, it appears from the above discussion that students' approach to studying (APTS), time management skill (TMS), motivation (MO) and academic performance (AP) are interrelated. Knowledge of relation of these variables is indispensable. This is because, if the variables are found to be correlated considerably, this may indicate that improving students' academic performance and quality of their learning requires corresponding improvements in approach to studying, time management skill and motivation. Despite this importance, it is amazing that as far as the writer of this paper is aware, there is no study that investigates interrelationships of these variables in the Ethiopian context.

### 1.2 Statement of the Problem

The governments' emphasis on increasing the number of students entering Ethiopian higher education institutions means that students whose learning styles and level of performance would previously have been a barrier to entering higher education institutions are now finding the doors of higher education opened to them. Many of these students are unprepared to meet the studying demands of higher educations and will not succeed unless they are provided with a special help in their academic endeavors.

The production of high quality, competent and skilled graduates is vital to create the vivacious socio-economic development of our country (Higher Education Relevance and

Quality Agency, 2006). Higher Education Relevance and Quality Agency was established to enhance the quality of higher education provision in all higher education institutions in Ethiopia, both public and private. Quality of the students' learning is related to quality of their approach to learning or studying (Prosser & Trigwell, 1990). Progression from the passive to the active learner and from a surface to a deep approach is essential for student learning and highly appropriate to higher education. Deep approaches to learning have been identified as being consistent with the goals of higher education, quality outcomes, better grades and the development of higher level cognitive skills (McLean, Reid & Scharf, 1999 cited in Murphy & MacGrath, 2006).

However, like most things in the world, there are good, skillful, and efficient ways of studying and poor, clumsy and wasteful ones (Morgan & Deese, 1957). The importance of good study skills for students is a basic belief of teachers and counselors and one that is supported by the literature. Robinson (1961) contends that few students are as effective in their school work as they would like to be. When asked to list their problems or to check them on a problem checklist, Robinson points out, students mention difficulties with their studies more often than any type of problem. Furthermore, Morgan and Deese argue that every year, a number of college students are in academic trouble simply because they do not know the techniques of study. This is because most students entering higher education institutions from schools are not well-prepared for the different types of learning and studying required of them (Entwistle, 1994). Even very capable students need to know more about studying effectively because according to Nist and Simpson (2002), although it is well accepted both in theory and in practice that academically successful college students know how to study, research suggests that many students enter postsecondary institutions unprepared to meet the studying demands placed on them. This lack of preparation can be traced to the fact that study strategies are hidden because teachers at all levels assume that their students already have a repertoire of studying behaviors. As a result, many abroad colleges and universities offer study skills courses or programs that teach students to be efficient and active learners.

Nevertheless, the situation in our country is different. Despite the importance of high quality study approaches as determinants of high quality learning and academic progress in higher education and students' lack of the necessary study skills, there is little or no attempt to improve these skills in the Ethiopian higher education institutions. As a graduate student, the writer's observation of the students' study strategies, his interest in tertiary education and his working background as a stuff member in Mizan-Tepi University has led him to the present research. Four years ago, when he was undergraduate student at Bahir Dar University, the writer observed that many students start their studying when examination days approach. When he was teaching at Mizan-Tepi University, he also observed that many students have difficulties of how and when to study and that they wait for announcement of tests or exam schedules to start their actual studying. This may lead to cramming only for exams in a short period of time which puts deep learning in jeopardy. If this trend is allowed to continue unchecked, the students will not be successful not only in their academic activities but also in their work places. The reason is that they are adopting surface approach to studying which generally leads to low retention and an inability to use the learned information in new contexts (Marsh, 2006). The starting point for making appropriate interventions in this area is knowing what research says about interrelationships of the students' APTS, TMS, MO and AP. This is because if we find that these variables systematically vary together, by enhancing the quality of the students' APTS, TMS and MO; we may enhance quality of learning and AP. This study, therefore, sought to answer the following research questions:

1. Are there statistically significant relationships among students' approach to studying, time management skill, motivation and academic performance?

2. What proportion of the variance in academic performance do approach to studying, time management skill and motivation explain?

3. Do female and male students significantly differ in their approach to studying, time management skill and motivation?

4. Are there statistically significant differences in the students' academic performance with respect to gender and approach to studying, gender and time management skill, and gender and motivation?

## 1.3 Operational Definition of Terms

This section presents definition of important terms as used in this study.

**A. Approach to Studying (APTS)** – is the strategy that the students use when they study which is measured by Approaches and Study Skills Inventory for Students (ASSIST) (Centre for Research on Learning and Instruction, 1997). ASSIST has the following three major components:

- *Surface Approach to Studying (SUR)* – is an approach that is characterized by students' attempt to meet academic requirements minimally and limit target to reproduce them through rote learning.
- *Strategic Approach to Studying (STR)* – is an approach in which students strive to be competent in dealing with their academic tasks (e.g., by ensuring that the conditions and materials for studying are appropriate and obtaining highest grades, whether the materials are interesting or not).
- *Deep Approach to Studying (DP)* - is students' approach to studying that is characterized by discovering meaning through reading widely, interrelating relevant previous knowledge, and inherent interest to develop competence in particular academic areas.

DP and STR approaches are considered as high quality components of APTS while SUR is the low quality component.

**B. Time Management Skill (TMS)** – is concerned with such activities as making and following a schedule, being organized in using time and perceived use of time to be purposive which is measured by the Time Management Scale (TMSC) (Nelson, 2003). TMSC has the following four components:

- *Making and Following a Schedule (MFS)* – is planning activities daily or weekly and carrying out them accordingly.
- *Being Organized in Using Time (BOUT)* – is arranging activities, materials, and study environments in a systematic manner so as to use time effectively and accomplish tasks successfully.

- *Perceived Use of Time to be Purposive (PUTP)* – is students' conception of their time as being spent purposefully or wasted.
- *Procrastination (PRO)* - is failure to manage time effectively in which students postpone doing academic activities that should be done today or immediately to some future time.

MFS, BOUT and PUTP are considered as high quality components of TMS while PRO is the low quality component.

**C. Motivation (MO)** - is reasoning of the students for coming to university which is measured by the Academic Motivation Scale (AMS) (Vallerand, Pelletier, Blais, Briere, Senecal and Vallieres, 1992 cited in Areepattamannil, 2006). AMS has the following three major components:

- *Amotivation (AMO)* - is students' relative lack of clear reasons for coming to university.
- *Extrinsic Motivation (EXMO)* - is students' reasoning for coming to university to get some outcomes (e.g., to get a high paying job) that are different from inherent satisfaction of engaging in academic activities.
- *Intrinsic Motivation (INMO)* - is students' reasoning for coming to university to get the pleasure or satisfaction derived from it or for the enjoyment they experience when accomplishing academic tasks.

INMO and EXMO are considered as high quality components of MO while AMO is the low quality component.

**D. Academic Performance (AP)** - is Cumulative Grade Point Average (CGPA) of two semesters.

## 1.4 Significance of the Study

Learning outcomes in higher education are of considerable interest to students, teaching staff, researchers and tertiary education institutions. Since students' approach to studying can and do affect not only their academic performance but also their future career opportunities and effectiveness in the work places, it becomes clear that the issue is very sensitive to teachers, educational administrators, guidance counselors and educators at large. Thus, the writer of this paper believes that this research will provide some information regarding interrelationships of the students' APTS, TMS, MO and AP to these and other concerned bodies. Besides, the study may add some findings to the knowledge base of relations of these variables. Finding out these relationships may also be important to suggest ways of improving students' academic performance and quality of learning. Moreover, the results may pinpoint future directions of research.

## 1.5 Scope of the Study

The study was delimited to Mizan-Tepi University main campus students because this campus was where the writer of this paper had been teaching and he assumed that this experience facilitates communication with concerned bodies and ease data gathering procedures. Also, although a number of variables could be related to students' APTS and AP, only TMS and MO were considered in this study on the assumption that they were more important factors as observed by the writer of this paper while he was teaching. Further, the study is delimited to only second year students in the campus. First year students were not included in the study since their cumulative grade point averages (CGPAs) were not available at the time of gathering data. Besides, third year students were also not included in this study. This was because the curriculum of third year education students will phase out starting from 2003 E.C. and since most of third year students were under the former faculty of education, conducting research on a program that will phase out seemed to be of little practical value. The results of this study, therefore, will not be generalized to first and third year students of the campus.

# CHAPTER TWO

# REVIEW OF RELATED LITERATURE

In this chapter, basic concepts of, measurement of and research conducted on approach to studying, time management skill and motivation will be discussed. The relationships among these variables, gender and academic performance will also be examined. The chapter winds up by summarizing major findings and implications of the reviewed literature.

## 2.1 Approach to Studying

Researchers most often use the terms approach to learning and approach to studying interchangeably. There is a general consensus in the research literature that students in higher education manifest a number of different approaches to learning that are dependent upon the context, the content, and the demands of the learning task. In particular, they adopt a deep approach in so far as they acknowledge the more abstract forms of learning that are demanded in higher education and are motivated by the relevance of the syllabus to their own personal needs and interests. Also students adopt a surface approach in so far as they encounter an overloaded curriculum and methods of assessment which emphasize the superficial properties of the material that is to be learned. Furthermore, they adopt a strategic approach to the extent that they receive cues about their assessment schemes from members of teaching staff (Richardson, 1993).

### 2.1.1 Basic Concepts of Approach to Studying

Marton and Saljo (1976a; 1976b), working in the University of Gothenburg, carried out qualitative analysis of a naturalistic experiment, in which students were asked to read an academic text and to be ready to answer questions afterwards. In the subsequent interviews, these researches found out that students differed in the level of understanding they displayed as a consequence of what was termed 'approach to learning.' Students adopted either a deep or a surface approach to the reading. The concept has since been extended to describe how students tackle many other learning tasks in lectures, essay writing, and problem solving (Marton & Saljo, 1976a; 1976b; Entwistle, 1994). According to Biggs (1994), approaches to

studying or learning are the ways in which students go about their academic tasks which affect the nature of the learning outcome. Entwistle and Ramsden (1983) cited in Siddiqui (2006) and Biggs (1987) define approaches to learning as the strategies which learners adopt in order to succeed at learning. To them, the term 'approach' is used to signify both the learner's intention and the way in which he or she processes information.

### 2.1.2 Measuring Approach to Studying

Most of the early research on learning approach used a qualitative, interview based methodology described as phenomenography. This approach involves looking at how students actually learn through intensive interviews and case study techniques (Watkins & Hattie, 1981). Biggs (1994) asserts that the measurement of approach to learning in the phenomenographic school is almost always by interview or by analysis of open-ended written statements gathered in connection with a particular task. Thus, there is no such thing as 'instrument' for measuring deep and surface approaches in Marton and Saljo's sense; although the inventories produced by Entwistle and Ramsden (1983) cited in Biggs (1994) and Biggs (1987) have been heavily influenced by the work of the phenomenographers.

However, other researchers argue that due to large number of students, it is unrealistic to carry out one to one interviews and therefore data obtained and analyzed in this manner have limited generalizability. Also Richardson (1994) cited in Byrne, Flood and Willis (1999) advises against the use of a phenomenographic approach in the absence of appropriate training and supervision of the researcher. Instead, he suggests the use of standardized questionnaires, which will generate quantitative scores. Similarly, Biggs (1994) stresses that approach to learning in the systems model (for details of systems model, see section 2.1.3 below) is measured by questionnaire. The Approaches to Study Inventory (ASI) developed in the United Kingdom for tertiary students by Entwistle and Ramsden (1983) cited in Entwistle (1993), the Learning Process Questionnaire (LPQ) and the Study Process Questionnaire (SPQ) that were developed in Australia by Biggs (1987) respectively for secondary and tertiary students are the most common examples of questionnaires measuring approach to learning.

The Study process Questionnaire (SPQ) is intended to measure three approaches to learning: deep, surface, and achieving (strategic). Studies in Australia and other countries have shown that the SPQ defines just two approaches, deep and surface (Biggs & Rihn, 1984; Watkins & Akande, 1992; Watkins & Regmi, 1990 cited in Byrne et al., 1999). Also, Christensen, Massey and Isaacs (1991) report difficulties with the SPQ's ability to measure the surface approach. Because of these problems, Richardson (1994) cited in Byrne et al. (1999) argues that the SPQ cannot be recommended as a useful instrument for research.

The Approaches to Studying Inventory (ASI) is probably the most widely used questionnaire on student learning in higher education (Entwistle, 1993). It was developed from earlier work at the University of Lancaster and was influenced by the work of Biggs (1976; 1979) and Pask (1976) cited in Byrne et al. (1999) and Marton and Saljo (1976a; 1976b). Due to problems with certain sections of the full ASI, a number of shortened versions were developed. These shortened versions lacked internal consistency. In 1992 a Revised Approaches to Studying Inventory (RASI) was developed by Entwistle and his colleagues at the University of Edinburgh. However, on reflection, the developers of the RASI admitted that the conceptual integrity of the shortened versions of the RASI had been sacrificed (Tait, Entwistle & McCune, 1997 cited in Byrne et al., 1999). This led to a further refinement of the instrument and the development of the Approaches and Study Skills Inventory for Students (ASSIST) that is considered in the present study. ASSIST was developed at the Center for Research on Learning and Instruction (CRLI), University of Edinburgh, Scotland. It is based on Marton and Saljo's (1976a; 1976b) contrast of deep and surface learning, combined with the strategic approach to studying. CRLI (1997) demonstrated that ASSIST is a further development of ASI and includes additional scales intended to extend the description of studying and reactions to teaching. The definition of the strategic approach has also been broadened to include an aspect of metacognition, self regulation and monitoring effectiveness. Thus, ASSIST measures approach to learning on three dimensions or main scales (deep, strategic and surface). While the distinction between deep and surface approaches has typically been confirmed through factor analysis, it has been less easy to identify the strategic approach.

### 2.1.3 Research on Approach to Studying

Students' approach to studying has been examined intensively since 1970s when this line of research was started by Pask (1976) and Biggs (1978, 1979) cited in Ropo (1993) and Marton and Saljo (1976a; 1976b). Ropo further asserts that studying itself is a complex cognitive activity affected by such factors as students' individual characteristics, the nature of the subject matter, teaching methods and assessment of learning. According to Biggs (1994), approach to studying has been investigated using four models deriving from personal style, information processing, phenomenographic theories and systems theories. The styles model focuses on stable individual traits, such as cognitive style or learning outcome. One major limitation with such model is that the styles are conceived as bipolar (e.g., field dependent versus field independent) and as independent of the context. The information processing model focuses on levels of processing theories of memory, and work on cognitive and metacognitive strategy use. There is however, some ambiguity due partly to methods of operationalizing strategy use. Phenomenographic model focuses on the idea that learning should be studied from the students' perspectives. In this view, an approach is intricately bound up with the task, its context and the nature of the outcome so that teaching deep strategies in the way recommended by information processing theorists is seen to be at best irrelevant and could even be counterproductive. The systems model assumes that students enter courses with overall goals (e.g., to aspire to top grades and pass with minimum effort), and with stable characteristics such as abilities, cognitive styles, and preferred ways of learning. An approach in the systems view differs from information processing view by including motivational and contextual components and from phenomenography by recognizing the role of personality factors in learning.

Phenomenography arose from the dissatisfaction of early learning theories and information processing approach. Biggs (1994) contends that phenomenography is a highly influential methodology in the student learning literature and is represented in the work of Marton and his team at the University of Gothenburg, of which Marton and Saljo (1976a; 1976b) study of surface and deep approaches to learning, and their relationships to the quality of the outcome, is a much quoted source. In phenomenography, learning is studied from the perspective of the learner, not that of the teacher or researcher. The objective is to see how students construe

the content, expressed as a form of the relationship the knower sets up with the known. Usually such constructions or conceptions can be expressed in a limited number of hierarchically ordered ways; some learners have partial or distorted conception of the intended topic, while others have sophisticated ones. Their approach to learning is how they go about that construction.

Extensive research on approach to studying based on phenomenographic and systems models began in 1970s (Marton & Saljo, 1976a; 1976b; Ropo, 1993). Marton and Saljo were interested in how students tackled the task of reading an academic article. Their work differed from traditional experiments in the use of realistically complex learning materials (an academic article of at least 1500 words) and in the application of rigorous qualitative analysis to interview procedures in which students reported their reading strategies and described what they had learned from the article. Marton and Saljo (1976a) distinguished between deep and surface approaches to reading the article. Essentially the deep approach involved an active attempt by the student to understand the authors' meaning, to explain the evidence in relation to the conclusion, and to relate the ideas contained in the article to the students' previous knowledge and experience. The surface approach, in contrast, was characterized by a tendency to memorize discrete facts or ideas, to be anxiously aware of the need to reproduce information at a later time, and to view a particular task in isolation both from the academic subject as a whole and from real life.

Later on, researchers found out that assessment has a crucial effect on approach to studying. Foos and Clark (1984) cited in Grasha (1995) demonstrated this effect by telling two groups of students to expect an essay or a multiple choice exam. Both groups were given multiple choice exam, and those who prepared for the essay exam made the highest exam scores. It was suggested that this considerable difference in scores might have been due to differences in approach to studying that the students adopted while preparing for the two types of exams. Also Ramsden (1981) and Biggs (1978) cited in Entwistle (1994) independently found that the pervasive influence of assessment necessitated the description of another approach to learning- 'strategic' (Ramsden) or 'achieving' (Biggs). It was in this manner that the 'strategic' dimension of approach to studying came into being. Students who always want to be better than others and try to earn the highest grade in a class are those who adopt the strategic

approach. In this case, it appears that students are conscious of two separate foci of attention: the academic content and the teacher's reward system. In the strategic approach, learners adopt deep and surface approaches in combination so as to achieve the highest possible marks. Also Lublin (2003) suggests that when the strategic approach is combined with a deep approach to learning in the course, it seems likely that it delivers both an intelligent engagement with the course as well as success in the course. Svensson (1977) argues that a deep approach to studying is functionally related to both conscientious, effective study methods and examination performance, while Marton and Saljo (1976b) warn that questions which encourage the regurgitation of factual answers are likely to shift students towards a surface approach. Other researchers have emphasized the context in which learning takes place and the content of the learning task itself. Thus, it would appear that different approaches to studying might be differentially effective in different courses and in objective and essay tests (Biggs, 1970b; Goldman & Warren, 1973 cited in Watkins & Hattie, 1981).

According to Ropo (1993), there are at least two kinds of assumptions about the nature of relationships between the instructional contexts and approach to studying. The first conception hypothesizes that approach to studying is based on static individual preferences to use specific approach. Here, although the independence of the approach is stressed, the influence of the context is not denied. In this assumption, students apply coherent approaches to their studying, but they tend to modify them if the context (e.g. teaching, assessment...etc.) forces or requires it. The second conception replaces the context as an influencing factor with the perception of the context. Students seem to perceive the same context in different ways and it is assumed that the perception of the context is connected with approaches to studying. Ramsden and Entwistle (1981) showed that the quality of teaching as measured by the mean of the students' perceptions can explain differences in the mean approaches to studying. Schmeck (1988) cited in Ropo (1993) assures that if teachers structure classroom situations so that students perceive them differently, the students approach the situations differently. Furthermore, Ropo contends that the quality of the students' approach to learning are related to students' perceptions of the academic learning environment, and that high quality approaches to learning are related to students' perceptions of high quality teaching. It is also indicated that students who adopt low quality approaches

(e.g., surface approaches) to learning prefer methods (teaching, assessment ...etc) which encourage such approaches.

On the other hand, Richardson (1993) attests that most research on approach to studying has ignored gender and that the few previous studies which have compared the responses given by male and female students are open to methodological criticisms. He conducted two series of studies using different forms of the Approaches to Studying Inventory (ASI) to investigate the possibility of gender differences in approach to studying and found no consistent evidence of significant difference between male and female students in terms of their scores on individual items, subscales, or learning orientations. Similarly, Byrne et al. (1999) contend that those studies which tested for gender differences in approach to learning failed to find any consistent evidence.

The theoretical framework for conceptualizing students approach to studying that is used in the present study is an adoption of both phenomenographic and systems theories. In the context of this study, a high quality approach to studying is one in which students indicate that they adopt more deep and strategic approaches than the surface approach.

## 2.2 Time Management Skill

Time is one of our most valuable resources, yet few people use it wisely. 'We all have time to either use or waste and it is our decision what to do with it. But once passed, it is gone forever' (Center for Good Governance, 2006:1).

### 2.2.1 Basic Concepts of Time Management Skill

Time management is a skill few people have but one that most people need (Mcwhorter, 1996). Also Taylor and Bonsall (1995) posit that time management is a skill that involves identifying areas of high and low priority, and allocating time accordingly. Similarly, Gardner and Jewler (1997) assert that time management is a lifelong skill and that the more college students manage their own time, the more they manage other peoples' time later in their work places. However, there is no consensus among scholars regarding the definition of time management skill. Sansgiry, Bhosle and Sail (2006) describe students' time management as clusters of behavioral skills that include activities performed by students such as planning

in advance, prioritizing work and following schedules. Claessens, Eerde, Rutte and Roe (2005) define time management as behaviors that aim at achieving an effective use of time while performing certain goal-directed activities. This definition emphasizes that the focus of time management is on some goal-directed activity, such as performing a task or an academic duty, which is carried out in a way that implies an individual's effective use of time. But, Center for Good Governance (2006) argues that time management has perhaps been wrongly interpreted. This is because time is uncontrollable and therefore people can only manage themselves and their use of it.

### 2.2.2 Measuring Time Management Skill

Past studies have mainly used self-report questionnaires. There were only a few diary studies and experiments. According to Claessens et al. (2005), a total of 10 different types of self-report questionnaires were used to measure time management behaviors, three types of which were used more often. These commonly used questionnaires are:

- the Time Management Behavior Scale (TMBS, Macan, Shahani, Dipboye & Philips, 1990);
- the Time Structure Questionnaire (TSQ, Bond & Feather, 1988); and
- the Time Management Questionnaire (TMQ, Britton & Tesser, 1991).

The TMQ was constructed by Britton and Tesser (1991). It included items on attitudes towards time management and planning the allocation of time. The scale consisted of three factors, namely short-range planning, long-range planning, and time attitudes. However, internal consistency and temporal stability data are not available for TMQ (Nelson, 2003). In the same manner, Bond and Feather (1988), in their research on the psychological effects of unemployment, developed the TSQ to assess the degree to which individuals perceive their use of time to be structured and purposive. However, Macan et al. (1990) argue that this instrument does not measure traditional time management behaviors, but instead assesses purpose and structure using global items. The Future Time perspective (FTP) which assesses a person's thoughts and feelings about future was also found to have limited utility in measuring traditional time management behaviors. Because of these drawbacks, Macan et al. (1990) were forced to develop the TMBS that is consistent with the popular literature. TMBS

has acceptable psychometric properties, but Nelson (2003) contends that the Hawaii Time Management Scale (HTMS) is more content valid than any previously developed instruments for measuring time management skills. The present study uses items adapted from the HTMS.

### 2.2.3 Research on Time Management Skill

As indicated at the beginning of the section on time management skill, there is no consensus among scholars regarding its definition. Claessens et al. (2005) argue that not only a definition, but also a theory on time management is lacking. The question "how does time management work and why?" is still unanswered. Only Macan (1994) presented a model of time management that comprised antecedent, mediating, and outcome variables with respect to time management behaviors. She found that time management training was positively related to only one scale of the time management behaviors, goal setting and priorities.

Although this area is not much researched, time management has a considerable contribution to the academic success of the students. For instance, university students may become overwhelmed with feelings that there is no enough time to complete all their work adequately and find the academic experience very stressful. According to Macan et al. (1990), one potential copying strategy for this problem that is offered by university counseling services is time management. They went on discussing that although poor time management behaviors such as not allocating time properly or last minute cramming for exams have been frequently discussed as a source of stress and poor academic performance, only a few empirical studies have attempted to test these relationships. Similarly, Bond and Feather (1988) indicate that in psychology, much of the research on time has been concerned with time estimation and perception, time perspective and future orientation, phenomenology of time, psychopathology of time, social psychology of time, subjective time experience and personality characteristics. In their own study, using university students, Bond and Feather found positive relations between perceived use of time and a sense of purpose in life, self-esteem, reported health, present standing and optimism about the future, more efficient study habits and negative relations between perceived use of time and depression, psychological distress, anxiety, neuroticism, physical symptoms, hopelessness, and anomie.

On the other hand, research on the act of purposefully delaying the start or completion of academic tasks - academic procrastination - has received much attention. The term 'procrastinate' came from the Latin word 'procrastinare' which means to put off, delay, prolong, defer, stall, or postpone performing a task (Steel, 2007). Academic procrastination is the purposive delay in the start or completion of educationally-related tasks. It is failure to do things at the time they have to be done. Akinsola, Tella and Tella, (2007) point out that procrastination has been found to result from cognitive distortions of faulty thinking and also related to problems of perceiving and estimating time. Procrastinators have a problem of setting goals for themselves, and subsequently perceive that they have less control of time in a given period (Brownlow & Reasinger, 2000).

A number of studies have indicated that academic procrastination is associated with ineffective learning strategies, lower grade point averages, boring or difficult assignments, unplanned study habits, fraudulent excuses, plagiarism, anxiety, fear of failure, depression, irrational thought, less self-efficacy, less self-control, and less delay of gratification (Elmer, 2000). Further, review of procrastination literature revealed that procrastination is related to slipping off the lesson, unpunctuality, difficulty in following instructions, low effort for success, weak self-efficiency, weak self-esteem, low capacity, anxiety and neuroticism, low consciousness level and inadequate motivation (Akinsola et al., 2007). Similarly, Brownlow and Reasinger (2000) assert that procrastination is common among college students, even though failure to perform academic work in a timely fashion leads to lower grades and causes personal stress. They also indicate that academic procrastinators study fewer hours than they had planned to study for exams, intend to start later (and actually start later) than they should on class assignments and delay in returning materials to professors. Furthermore, Brownlow and Reasinger claim that students who procrastinate on school tasks tend to be dissatisfied with their courses and earn lower grades than non-procrastinators. Thus, they concluded that procrastination behaviors are common problem among college students and influential factors on their personalities, psychological well being and academic achievement. However, according to Brothen and Wambach (2001), the effect of procrastination on performance is only slightly clearer. Research on this point has yielded mixed results. A few have found no connection while others found a weak relationship.

Regarding time management skills and gender, using TMBS and college students, Macan et al. (1990) revealed that the overall TMBS score was significantly correlated with gender indicating that women were better time managers than men. Similarly, using the same instrument and university undergraduate students as sample, Misra and McKean (2000) found that females had more effective time management behaviors than males.

### 2.2.4 Good and Poor Time Management Skills

The essence of time management is knowing what one's values and goals are in life and making the optimum use of time to achieve these ends. Few people would argue against the fact that some students manage their academic time effectively while others not. By the time they enter a college, some of the students are already better than others at setting priorities (Gardner & Jewler, 1997).

#### 2.2.4.1 Good Time Management Skill

Time management, according to Smythe, Grove and Robertson (1998), includes determining needs, setting goals to achieve the needs, prioritizing the tasks required and matching tasks to time and resources through planning, scheduling and making lists. It involves planning, judgment, anticipation and commitment. Gardner and Jewler (1997) claim that in order to manage time effectively, students should do four things: first they must know what their goals are and where they want to be at some future time. Second, they must decide where their priorities lie and how to satisfy competing interests. Third, they must make plans that anticipate future needs as well as possible changes. Fourth, they must commit to placing themselves in control of their time and carry out their plans. In the same manner, the Learning Centre (2001) suggests that the first step to good time management is to prioritize tasks; that is deciding which task is most important and should be completed first. To prioritize successfully, students must develop weekly and long term time management plans. Planning ahead saves time, stress and energy. Kalish (1979) points out that planning time consists of two components: planning the minutes and hours and planning the days and the weeks. Planning the minutes and the hours helps avoid wasting time unnecessarily and planning the days and the weeks helps avoid last minute cramming for exams and all night sieges to complete term papers and laboratory reports. In combination, both types of planning

help provide time for leisure and for non-academic concerns without sacrificing the time required to complete academic tasks. Thus, students need to organize their study places and know where and when they concentrate best.

#### 2.2.4.2 Poor Time Management Skill

If people are not managing their time, then they are wasting it (Ahmad, 2007). Poor time management skill manifests itself in one or a combination of typical perceptible ways. According to Center for Good Governance (2006), poor time management skill includes:

***a. Lack of plan***: Absence of a plan of action is likely to trigger off a false start, resulting in unproductive time utilization on the critical path of the task being undertaken. Consequently, students might not find enough time for completing the task.

***b. Lack of prioritization of tasks***: As a result of the inability to distinguish between the urgent, the important and the unnecessary tasks, unimportant tasks are likely to get done first at the cost of important tasks. Consequently, students are not likely to find enough time to do the important things.

***c. Interruptions***: Interruptions and distractions arise due to lack of planning, poor concentration and lack of control over the environment. Students should learn to avoid distractions if they are to get the work done. They should work in areas where they are less likely to be disturbed and tell when they are busy and cannot be disturbed.

***d. Disorganization***: Students often waste much time because of disorganization. Keeping things that they need in a specific place, eliminating clutter, making sure that they have all the materials or information that they need before starting on a task and following a schedule will help students avoid disorganization at their study places.

***e. Procrastination***: It is easy to put off tasks if they are not due right away. However, the trouble is that tasks pile up and can force students to run into a time crunch later.

Research indicates that procrastination is the most common students' time management problem. Gardner and Jewler (1997) suggest that procrastination may be the single greatest enemy of students. While research evidence does not support the utility of last-minute strategies, such as cramming for exams, students may nonetheless engage in these behaviors as a result of procrastination. Although the challenges to time management posed by the

university environment contribute to students' vulnerability to procrastination, they are not the sole cause. Young and Fritzsch (2002), professors at the University of Central Florida, identify the work of student procrastinators in the following manner:

> *... All of us are familiar with the disappointing symptoms of procrastination behavior. When a student shows us a paper that outlines the main focus at the end, that overlooks important points, that displays only sketchy support from outside sources, that is marred by surface level errors, that barely reaches the assigned length, we know that paper doesn't represent the student's best work. More likely, that paper is a first draft written during an "all-nighter" by a student fortified with caffeine and sugar (p.45).*

In the same manner, Neville (2007) asserts that a common form of procrastination for college students is to delay starting an assignment beyond a scheduled start time and then have to work furiously to finish it on time. In some cases, a time extension has to be sought, although institutions usually only allow this in exceptional cases. Also Morgan and Deese (1957) contend that most students who set up study schedule do not find it to be of much help because they cannot make it work. Though they start off with good intentions, they cannot manage to study when they are supposed to. Thus, besides planning their study, students need to develop skills of implementing what they have planned. Yet, a schedule should be considered as a guide, not something to be followed religiously every week. This is because some weeks will be busier than others, and unforeseen things can happen. The Learning Centre (2001) advises students to try to stick to their plan as best as they can and not to panic if they miss it, but to look at the schedule and rearrange their time.

### 2.3 Motivation

The term motivation is derived from the Latin word 'movere' (to move) implying that motivation is something that gets us going, keeps us moving, and helps us complete tasks. Despite these commonly held ideas, there are many definitions of motivation and much disagreement over its precise nature. The definition of motivation that captures the elements considered by most researchers and to be central to motivation is that motivation is a process whereby goal-directed activity is instigated and sustained (Pintrich & Schunk, 2002).

### 2.3.1 Basic Concepts of Motivation

No human being is unmotivated. All human behavior is an attempt to meet some needs. Therefore, when we say that students are not motivated by a particular activity, all we are saying is that this activity, at this time, presented in this way is not meeting their needs (Porter, 2009). To be motivated means to be moved to do something. People do not only have different degrees of motivation, they also have different kinds of motivation; although its level and orientation will vary according to situation (Ryan & Deci, 2000). Many contemporary theories of motivation have sought to explain such student behavior as what drives some students to work hard, often over long periods of time and even with little progress, while others give up at the first sign of problems. Motivation is seen as a dynamic, multifaceted phenomenon. That is, students can be motivated in multiple ways and motivation is contextual (Nilsen, 2007).

Although academic motivation has been examined from a multitude of theoretical perspectives (e.g., Bandura, 1990; Weiner, 2001; Wigfield & Eccles, 2000 cited in Faye & Sharpe, 2008), much of the recent research has been guided by self-determination theory (SDT). SDT is a general theory of human motivation concerned with the development and functioning of individuals within social contexts. The theory focuses on the degree to which human behaviors are volitional or self-determined - that is, the degree to which people endorse their actions at the highest level of reflection and engage in the actions with a full sense of choice. Motivation is defined by SDT as the reasons underlying behavior (Ratelle, Guay, Vallerand, Larose, & Senecal, 2007).

Entwistle (1993) attests that the term motivation does not indicate a single dimension. The theoretical framework of SDT which proposes a multidimensional perspective on motivation is a potent solution to the unidimensional study of motivation (Ratelle, Guay, Larose, & Senecal, 2004). SDT was initially developed by Edward L. Deci and Richard M. Ryan, professors in the Department of Clinical and Social Sciences in Psychology at the University of Rochester. The authors proposed that different types of motivation are placed on a continuum from the most intrinsic, where decisions are made based on personal choice and locus of causality is internalized, to the most extrinsic, where decisions are made based on

compliance or competition and locus of causality is external (Soric, 2009). The present study uses their approach to motivation.

### 2.3.2 Measuring Motivation

Most researchers (e.g., Lepper, Greene & Nisbett, 1973 cited in Pintrich & Schunk, 2002) agree that we infer the presence of motivation from such behavioral indicators as choice of tasks, effort, persistence and achievement. Thus, motivation can be measured in various ways including direct observations, ratings by others and self report. Self report instruments include questionnaires and interviews.

On the other hand, Vallerand et al. (1992) declare that a new measure of motivation toward education has been developed in French, namely the *Echelle de Motivation en Education* (EME) which was translated into English and renamed as the Academic Motivation Scale (AMS). According to these authors, AMS is based on the tenets of SDT and has three major subscales that assess the three motivational phases: amotivation, extrinsic and intrinsic motivation.

### 2.3.3 Research on Motivation

Initially, the experimental study of motivation was linked with the search for the motors of behavior and was associated with concepts such as instinct, drive, arousal, need and energization. Weiner (1990) indicates that motivational psychologists were concerned with what moved a resting organism to a state of activity. The study of motivation for the educational psychologist has been confounded with the field of learning. Indeed, motivation is inferred from learning, and learning usually is the indicator of motivation. When addressing the role of motivation in the field of learning, Aggarwal (1998) claims, ' motivation arouses interest. Interest is the mother of attention and attention is the mother of learning. Thus, to secure learning, you must first catch the mother, grandmother and great grandmother' (p. 201).

Many early views linked motivation with such inner forces as instincts, traits, volition and will. But many early theories of motivation were behavioral, conceiving motivation in terms of overt action and looking for causes in the environment. Behavioral theories consider

motivation as an increased or continual level of responding to stimuli brought about by reinforcement or reward. Contemporary cognitive views examine the underlying mental processes involved in motivation and how these are affected by personal and environmental factors. Cognitive views postulate that individuals' thoughts, beliefs and emotions influence motivation (Weiner, 1990).

There was a general shift in psychology away from behaviorism towards cognition. For example, in the psychology of Edward Thondike, proponents believed that a reward would automatically increase the probability of the immediately prior response, augmenting later motivation when in that environment. However, Deci (1975) cited in Weiner (1990) argues that if reward is perceived as controlling, then it undermines future effort, while reward perceived as positive feedback is motivating. The views of de Charms (1968), Rotter (1966), White (1959) and Harter (1978) cited in Pintrich and Schunk (2002) stress that motivation drives in part from beliefs that individuals can exert control over their environment. A related perspective, SDT, which has been advanced by Deci, Ryan and their colleagues, postulates that humans have a need to be autonomous and engage in activities because they want. This perspective, according to Pintrich and Schunk (2002), is one of the most comprehensive and empirically supported theories of motivation available today. The basic assumption of SDT is that people are active organisms, with innate tendencies toward psychological growth and development, who strive to master ongoing challenges and to integrate their experiences into a coherent sense of self. According to this view, the three basic innate psychological needs-the need for competence, autonomy, and relatedness-underlie human behavior.

Deci and his colleagues (Deci, 1980; Deci & Ryan, 1985; 1991) cited in Pintrich and Schunk (2002) distinguish 'self-determination' from 'will' by defining 'will' as the capacity of the human organism to choose how to satisfy its needs and self-determination as the process of utilizing one's will. According to Sheldon, Abad and Omoile (2009), SDT is a theory of optimal motivation that has been under development for nearly 40 years. The theory is based on the concept of intrinsic motivation; that is, behavior undertaken because of the inherent interest and enjoyment it provides. As Deci and Ryan point out, individuals' level of intrinsic motivation toward a particular achievement activity will vary as a function of the degree to which they perceive themselves to be competent at that activity and believe themselves to be

self determining with regard to their performance and behavior in that activity. Intrinsic motivation is satisfied when an individual acts willfully (Pintrich & Schunk, 2002). It begins in infants as an undifferentiated need for competence and self-determination. As children develop, the need differentiates into specific areas such as the need to achieve in academics, athletics or manual activities. Which activities begin to have power on children's interest depends on environmental interactions.

Deci and Ryan were quite aware that not all behavior is intrinsically motivated. Recognizing this, these authors and their colleagues have developed a second sub-theory within the larger SDT, which they have labeled, Organismic Integration Theory. According to this theory, there are three phases of motivation: Amotivation, Extrinsic, and Intrinsic Motivation. These phases of motivation can be described in the following manner (Vallerand et al., 1992; 1993; Vallerand, Fortier, & Guay, 1997; Ryan & Deci, 2000 & Barkoukis, Tsorbatzoudis, Grouios & Sideridis, 2009):

a) ***Intrinsic Motivation:*** Intrinsic motivation refers to engagement in an activity for the pleasure and satisfaction of performing it. Intrinsically motivated individuals voluntarily participate in an activity without experiencing external or internal pressures to do so and without expecting rewards. That is, intrinsic motivation occurs when the activity is inherently satisfying and enjoyable. For instance, a student who reads a history book because she finds it interesting displays intrinsic motivation. Intrinsic motivation is a global construct that can be differentiated into three more specific motives: intrinsic motivation to know, to accomplish and to experience stimulation.

***b) Extrinsic Motivation:*** Extrinsic motivation refers to behaviors that are done to attain some outcome separate from what exists within an activity, such as doing academic activities to get a reward or to avoid punishment. It is being engaged in activities because of external or internal pressures. In such instances, behavior operates as a means to an end and not for its own sake. Three types of extrinsic motivation are defined in the SDT tradition: external regulation, introjection and identification.

***c) Amotivation:*** The third dimension of motivation identified in SDT is amotivation. This dimension refers to the absence of a contingency between one's actions and outcomes. That

is, amotivation occurs when individuals are unable to perceive the motives underlying their actions. For instance, students' being at school without feeling it was their choice or within their control. Amotivation indicates the relative absence of motivation. Amotivated individuals do not seem to have specific purposes and goals and they do not seem to approach ends in a systematic fashion. These individuals experience a loss of control and a sense of alienation. They might carry out an activity but their environment is mechanical; they constantly question their involvement in the activity and eventually abandon it. Amotivation has been related to learned helplessness, where individuals withdraw effort because of perceptions of incompetence and loss of control. Their involvement in an activity is not a result of their will. Like intrinsic and extrinsic motivation, one can distinguish four different types of amotivated behavior: (a) the belief concerning the lack of ability to perform an activity, (b) the belief that the adopted strategies will not produce the desired outcomes, (c) the belief that the activity is too demanding for the individual, and (d) the belief that even high effort is not adequate for successful task performance.

On the other hand, Ratelle, Guay, Vallerand et al. (2007) studied gender difference in motivation among high school and college students. They found that in comparison to boys, girls reported higher levels of intrinsic motivation, identified and introjected regulations, and lower levels of external regulation and amotivation. In the same manner, Vallerand et al. (1992) indicated that although further research has to be conducted to more fully understand sex differences in motivation, female students display a more self-determined motivational profile than male students.

### 2.4 Academic Performance

Academic performance or educational achievement refers to what an individual knows and can do in a specified subject area as a consequence of instruction (Messick, 1984). Prosser and Triggwell (1990) attest that student achievement is usually defined in terms of the amount students learn in a particular course and assessment grades obtained by students are the usual measure of the amount learnt. Semester Grade Point Average (SGPA) or Cumulative Grade Point Average (CGPA) is a commonly used indicator of academic performance in colleges and universities. SGPA is the weighted average of the grade points

obtained in all courses registered by the student during the semester. CGPA is weighted average of the grade points obtained in all courses registered by the student since he or she is admitted to the college or university. In the present study, CGPA is used as a measure of academic performance.

## 2.5 Interrelationships of Approach to Studying, Time Management Skill, Motivation and Academic Performance

### 2.5.1 Approach to Studying and Time Management Skill

Entwistle (1992) indicates that there is a functional relationship linking approach to learning and the number of hours spent studying. Similarly, Siddiqui (2006) asserts that students who adopt the strategic approach intend to achieve the highest grades through effective time management, organized study methods and an awareness of assessment methods. Also Entwistle, Thomson and Wilson (1974) suggest that the simplest indicator of study habits must be based on estimates of the number of hours worked by a student in a typical week. However, it is clear that quality as well as quantity of studying is important. Long hours of obsessive and ineffective work will rarely lead to academic success. In fact, Malleson (1963) and Ryle (1969) cited in Entwistle et al. (1974) demonstrated that obsessiveness is one of the symptoms of study difficulties associated with psychiatric disturbances which has been described in clinical investigations. Furthermore, Bond and Feather (1988) using university students as sample and Time Management Questionnaire, respectively found a significant correlation of .66, .34, .31, .24, .34 and .38 between study habits and use of time, sense of purpose, structured routine, present orientation, effective organization and persistence all of which are the elements of the questionnaire. These findings imply that there is some pattern of relationship between approach to studying and time management skill. In the same manner, Svensson (1977) revealed that students who study their subjects deeply are likely to find the material more interesting and then long hours of work become no hardship. In contrast, students who adopt a surface approach are concentrating on the inappropriate techniques of learning-memorization, and it takes a long time to cover books in this way, and it is tedious and unrewarding activity. This researcher reported the results of one study in which nine of the 11 students adopting a deep approach to normal studying also did three or

more hours' independent work a day. All nine passed their examination. Nineteen of the students adopted a surface approach and eight of them, even in the first year, admitted to working less than three hours a day. All eight failed their examination.

On the other hand, Lay and Schouwenburg (1993) cited in Claessens et al. (2005) studied the relation between trait procrastination and good time management skills. They found that students high on trait procrastination exhibited a greater likelihood of being behind schedule on their personal projects, studying fewer hours than intended for an examination, and having low scores on feeling in control of time, setting goals and priorities. These students also used fewer time management techniques.

### 2.5.2 Approach to Studying and Motivation

Students motivated to learn are likely to expend greater mental effort during instruction and employ cognitive strategies they believe will promote learning. These strategies include organizing and rehearsing information, monitoring level of understanding, and relating new material to prior knowledge (Pintrich & Schunk, 2002). Fransson (1977) showed that a student motivated by test demands to read a text for which he or she has a very limited interest is very probable to adopt a surface learning strategy. However, deep learning appeared to be the usual study strategy chosen by a student motivated only by the relevance of the content of the text to his or her personal needs and interests. Thus, he concluded that extrinsically motivated students show a strong tendency to choose surface level processing. Similarly, Christenson, Massey and Isaacs (1991) assert that deep approach is coupled with intrinsic motivation while the surface approach is comprised of motivation through fear of failure. In the same manner, Entwistle (1993) contends that both interest and anxiety affect students' approach to learning in such a way that anxiety provoking situations induce a surface approach to learning. This mechanical, rote learning approach was also related to lack of interest in the text and attempts to gear learning to anticipated questions. Thus, Entwistle concluded that where a student feels threatened, or under pressure to respond to examination demands on syllabi which have little personal relevance, it is less likely that a deep approach will be adopted. Moreover, Entwistle (1994) indicates that the deep approach has its roots in an intrinsic educational orientation and a sophisticated conception of learning.

In contrast, a surface approach derives from an extrinsic orientation and a simple conception of leaning as memorization. The surface approach involves an intention merely to satisfy task or course requirements that are considered as external impositions largely remote from personal interests.

### 2.5.3 Approach to Studying and Academic Performance

Svensson (1977) revealed that most of the students who consistently adopted a deep approach passed all their examinations, whereas less than a quarter of those using a surface approach were fully successful. Marton and Saljo (1976b) demonstrated that while many students are apparently capable of using the deep or surface strategies, it may be that the existing assessment system interpreted by them as requiring mainly the recall of factual information to the detriment of a deeper level of understanding. These authors further pointed out that students need to focus their attention on the underlying meaning of what they are required to study and that this process could be helped by ensuring that the assessment procedures demand deep level processing.

The student approach to learning paradigm argues that high achievement can be predicted by a deep approach, either alone or in combination with a strategic approach. In contrast, low achievement can be predicted by a surface approach to learning. Indeed, the surface learning approach has consistently been found to negatively correlate with academic success (Burton, Taylor, Dowling & Lawrence, 2009). For instance, previous research on direct relationships between approach to learning as measured by the Study Process Questionnaire (SPQ), and performance assessment in tertiary students has indicated a negative relationship between surface scores and performance, and positive relationships for deep and achieving scores with performance (Biggs, 1985 cited in Beckwith, 1991; Watkins & Hattie, 1981). Other researchers have also investigated the relationships between the three learning approaches (i.e., Deep, Strategic and Surface) and academic success. Brown and Holzsman (1966) cited in Rutkowski and Domino (1975), on the basis of several studies with college students reported an average correlation of .36 between their Survey of Study Habits and Attitudes and grade point average. Watkins (1986) found that disorganized study methods were significantly associated with low marks in arts subjects whereas surface level learning

strategies were major indicators of low grades in economics subjects. CRLI (1997), using ASSIST, found that strategic approach to studying was positively related to academic performance (.43) while the relation between surface approach and academic performance was found to be negative (-.46).

However, according to Trigwell and Prosser (1991), for various historical and technical reasons, formal assessment of learning has tended to emphasize quantitative growth in competence. As a result, relationships between especially deep approach to learning and institutional assessment outcomes have not been as clear cut; and have even been negative in some courses.

### 2.5.4 Time Management Skill and Motivation

Although, time management is essential for having a successful life, if there is lack of motivation, it can be a struggle. Motivation is important for time management since when people are lacking motivation, they probably do not plan their activities, do not keep their important documents filed, or do not meet time plans that are required of them. Pintrich and Schunk (2002) argue that students who are motivated to learn spend more time on task, especially when they encounter obstacles. Ahmad (2007) indicates the relationship between time management and motivation in the following manner:

> *... time management can make peoples' life orderly and hassle free. People who manage their time well are people who have the drive to finish a task and prioritize what is really needed; and that is what we call motivation, which is the drive that pushes us to do a certain task. What makes a person practice time management is the fact that he is motivated to do the task. He wants it to be perfect and to be systematic on what he plans to do. A person who may apply time management but lacking motivation is like a sailing ship without wind, the wind is the motivation that pushes the ship who happens to be the person. It is difficult to imagine time management without motivation because it will be useless. People cannot follow the schedule if they are not motivated at all (p. 2).*

On the other hand, Tice and Baumeister (1997) cited in Brownlow and Reasinger (2000) indicate that procrastinators have difficulty self-regulating, and therefore need to be externally motivated in order to get their work done. In their own study of academic procrastination and motivation in college students, Brownlow and Reasinger hypothesized

that academic foot-dragging or procrastination would be a function of motivation because salient intrinsic or extrinsic rewards may determine whether or not procrastinatory school behaviors will occur. The results of their study revealed that low extrinsic motivation coupled with external attributional style and locus of control predicted the general tendency to postpone school tasks. Furthermore, they found that men who reported procrastinating in school were less intrinsically motivated and satisfied with academic tasks than men who did not. Women, regardless of their academic procrastination tendencies, did not differ in their intrinsic motivation toward school work. Moreover, these researchers pointed out that for those who were neither intrinsically nor extrinsically motivated, academic procrastination was likely. In other study, Conti (2001) found that higher intrinsic motivation was associated with checking and thinking about time less often, a subjective experience of time passing more quickly, more of a tendency to lose track of time; and concluded that time perception is an important dimension of motivational experience.

### 2.5.5 Time Management Skill and Academic Performance

Some authors suggest that time management skill has a direct impact on the relative academic success of college students (Macan et al., 1990; Britton & Tesser, 1991). Several studies (e, g., Davis & Sidman, 1962; Epley & Ricks, 1963; Goldrich, 1967 cited in De Volder & Lens, 1982) revealed that students with high grade point averages were characterized by a long future time perspective. In their own studies, De Volder and Lens found that students with high grade point averages (GPA) and high study persistence attained significantly higher valence to goals and higher instrumental value to studying hard for reaching goals in the distance future. Working on the assumption that students would find difficulty in reporting their activities accurately, Entwistle and Entwistle (1970) cited in Entwistle et al. (1974) prepared a specifically designed grid from which hours worked could be derived. Using this grid method, consistently significant relationships with CGPAs have been reported. Similarly, using TMBS and college students, Macan et al. respectively found correlations of .10, .20, .22 and .17 between GPA and setting goals and priorities; mechanics-planning, scheduling; perceived control of time and preference for disorganization which are all the factors comprising the scale. Furthermore, these researchers reported a significant ($p < .05$) correlation between GPA and the total TMBS score. The implication from this study is

that college students with good time management skills felt more in control of their time, experience less role ambiguity, and perceive that they perform better. Individuals who practice effective time management were clearer about their roles and perceive that they achieve more when utilizing time management techniques. In another study, Britton and Tesser (1991) explained the effects of time management skill on academic performance of college students. They concluded that time management skill accounted for 36% of the variance among college GPA and that time management behaviors were related positively with GPA. In the same manner, Zulauf and Gortner (1999) found that time management skill and study time were positively related with GPA. They further revealed that for an average student to raise his or her GPA by one letter grade, the study time would need to be increased by 26 hours. GPA increased only .04 points per additional study hour suggesting that substantial improvements in GPA require substantial increases in study time. Such an increase is clearly beyond the willingness or ability of most students, and can only be accomplished if the student prioritizes his or her academic goals.

### 2.5.6 Motivation and Academic Performance

According to Aggarwal (1998), in the individual, there is a need for achievement (n-ach). This need develops in early childhood and depends upon the discipline of the home. The theory of achievement motivation proposed by McClelland (1953) and Atkinson (1958) cited in Aggarwal (1998) states that a person who has a high need for achievement considers problems and obstacles as challenges to be met and that human beings differ from one another in the strength of achievement motive. The most productive and popular theories of achievement motivation have adhered to the expectancy-value framework. This perspective stresses that an individual's choice among achievement-related activities, and how hard one works at achievement tasks, is determined by one's expectancy of success and the value of that success. That means, what an individual attempts to accomplish depends upon what he or she will get and the likelihood of getting it (Weiner, 1985). Vallerand et al. (1992) suggest that achievement motivation can be subsumed in SDT under the umbrella of intrinsic motivation to accomplish things.

Entwistle (1993) posits that of all traits used to describe differences in students' academic attainment, perhaps the most common is motivation. When students attain learning goals, goal attainment conveys to them that they posses the requisite capabilities for learning. These beliefs motivate them to new and challenging goals. Students who are motivated to learn often find that ones they do, they are intrinsically motivated to continue their learning (Pintrich & Schunk, 2002). Entwistle et al. (1974) indicate that in universities and colleges, academic failure is often attributed to lack of motive power in the students or the ineffective utilization of such power by inappropriate study habits.

Intrinsic motivation has been linked to positive academic performance, more enjoyment of academic work and more satisfaction with school, greater conceptual learning and higher self esteem. Students who are more intrinsically motivated are more likely to stay in school than students who are less intrinsically motivated (Deci & Ryan, 2002 cited in Areepattamannil, 2006). In deed, Vallerand et al. (1992) indicate that amotivated students perceive their behaviors as caused by forces out of their own control, ask themselves why they go to school or college and eventually they may stop participating in academic activities (or drop out). In predicating academic performance, Areepattamannil (2006) respectively found standardized beta coefficients of -.23, -.27, and .24 between grade point average and amotivation, extrinsic motivation-introjected regulation and intrinsic motivation to accomplish things all of which are components of the Academic Motivation Scale. Moreover, this study revealed that the total variance in academic performance that was explained by motivation was 13%. He went on discussing that amotivation was a significant predictive variable, either singly or in combination, for both female and male's academic performance. Extrinsic motivation-introjected regulation was a significant predictor, alone or with other predictors, for all, except for males. The standardized beta coefficients for amotivation and extrinsic motivation-introjected regulation were negative for all significant models, indicating an inverse relationship between these two motivational variables and the overall academic performance.

## 2.6 Summary of the Review of Related Literature

Syntheses of the literature on approach to studying, time management skill, motivation and academic performance shows the following:

- Students in higher education adopt different approaches to learning of which the surface, strategic and deep approaches are major ones. These approaches are conditional on the context, the content and the demands of the learning task.
- Students' approach to studying strongly influences quality of the learning outcomes.
- So far, whether there exists gender difference in approach to studying is not clear because results were inconsistent probably due to methodological limitations.
- Students adopting deep and strategic approaches to studying tend to manage their time effectively than those adopting the surface approach.
- Students adopting deep and surface approaches to studying tend to be respectively intrinsically and extrinsically motivated. But students adopting the strategic approach appear to be either intrinsically or extrinsically motivated.
- Generally, the strategic and surface approaches to studying are respectively positively and negatively related to academic performance. However, the relationship between deep approach and academic performance is not clear yet.
- Female students seem to be better time managers than male students.
- Motivation helps a student to use his or her time effectively.
- While the influence of procrastination on performance is not clear yet, good time management behaviors and academic performance are positively correlated.
- Female students tend to be more intrinsically motivated than male students.
- Generally, high intrinsic and extrinsic motivation tend to be positively related to academic performance while amotivation tend to be negatively related to it.
- The fact that gender difference in approach to studying, patterns of relationship between deep approach to studying and academic performance and, procrastination and academic performance are not consistent across studies points to the need for further investigations in these areas.

# CHAPTER THREE

# RESEARCH METHODOLOGY

The design of the present study is correlational in nature. In this chapter, participants of the study, sampling procedures, instruments used, procedures followed in collecting data and methods of analyzing data are described.

## 3.1 Sample and Sampling Procedures

The participants of this study were second year Mizan-Tepi University main campus students of the 2002 E.C. academic year. There were two faculties and ten departments in which 1049 (558 female and 491 male) second year students were included. The sampling frame was the list of all second year students in each faculty and department. To select participants from this sampling frame based on faculties, departments, gender and achievement categories, a stratified random sampling method was used. (For details of achievement category, see section 3.3 below). To identify the starting point or participant, simple random sampling technique (the lottery method) was employed. That is, each individual in each achievement group within each department was assigned a number. Then, the same color and shape pieces of paper on which the numbers were written were prepared. Once the numbers were written on each piece of paper, rolled and thoroughly mixed up, the researcher drew one piece. That piece was considered to be a starting point. Finally, using systematic random sampling technique, the required number of participants was included. These sampling procedures were followed in both pilot and main studies.

A pilot study, the objectives of which were to test and improve the questionnaire, was conducted on 100 (53 female and 47 male) students which were randomly drawn from the population (1049 students) by considering faculty, department, gender and achievement category as strata. It was decided to conduct the pilot study on 100 participants since the aim was to factor analyze the instruments and 100 is the minimum sample size suggested for this purpose (Brace, Kemp & Snelgar, 2006). (For the results of the pilot study, see Appendix B).

The main study was conducted on a random sample of 220 (23% of the population, that is, 949 students excluding pilot study participants) of which 117 were female and 103 were male students (see Table 1 below). This sample size (220) was taken depending on the guideline for sampling which suggests that for such descriptive designs as correlational studies, 10% to 20% should be sampled because this size provides a good representation of the population if selected appropriately (Airasian & Gay, 2004). Out of the total sample, 166 (88 male and 78 female) students responded to the questionnaire appropriately. However, 54 (15 male and 39 female) students failed to provide complete data. From those who failed to provide complete data, 39 cases had one, six had two, five had three, one had four and three had five to seven missing values. The age of the participants ranged from 18 to 29 with a mean age of 21 years and a standard deviation of 1.32. Fathers or male guardians of majority of the respondents were uneducated (81, 36.80%) and farmers (135, 61.40%). Also mothers or female guardians of majority of the respondents were uneducated (101, 45.90%) and farmers (129, 58.60%). Only 16 (7.30%) of the fathers or male guardians of the participants involved in other occupations (e.g., police, guard ...etc) while 28 (12.70%) of the mothers or female guardians of the participants were engaged in household tasks. Nonetheless, 3 (1.40%) of the participants did not provide data about their parents or guardians.

Table 1 Demographic Characteristics of the Sample in the Main Study

| **Strata** | | **N** | **%** |
|---|---|---|---|
| Gender | Male | 103 | 46.82 |
| | Female | 117 | 53.18 |
| *Total* | | *220* | *100.00* |
| Achievement Category | High | 59 | 26.81 |
| | Medium | 96 | 43.64 |
| | Low | 65 | 29.55 |
| *Total* | | *220* | *100.00* |
| Faculty | Social Science and Humanity | 128 | 58.18 |
| | Business and Economics | 92 | 41.82 |
| *Total* | | *220* | *100.00* |

### 3.2 Data Gathering Tools

In this study, questionnaire and semi-structured interview were used to gather data. The interview items were developed by the researcher depending on the literature. The items focused on three variables (motivation, time management skill and approach to studying, see Appendix D). The questionnaire consisted of three scales and demographic questions (see Appendix A). The scales were Approaches and Study Skills Inventory for Students (ASSIST), Time Management Scale (TMSC) and Academic Motivation Scale (AMS). These scales were adapted from previously developed instruments and were chosen for different reasons. First, most of the items in each scale seemed not to be ambiguous and culture bound, and therefore, appropriate for Ethiopian higher education students. Second, the scales had well-established psychometric properties in their original forms and they were constructed in order to improve the limitations that their preceding instruments had. Third, the original forms of the scales were designed for higher education students. Some of the statements of the scales were slightly reworded so that they could be used for the purposes of the present study. Other items were used as presented in their original forms. Thus, at the beginning, a total of 220 items taken with and without modification were given to three staff members of the Institute of Psychology, Addis Ababa University. The feedbacks from these individuals indicated the need for analyzing some of the items qualitatively. More specifically, they suggested (1) to re-examine whether the items tap the required information, (2) to minimize the number of items, and (3) to modify some words or statements that could be difficult for students to comprehend.

Items were not translated into Amharic language since the students came from different regions of Ethiopia and there were students who could not understand Amharic well. English Language was considered to be common for all since it is the medium of instruction for Ethiopian students starting from at least grade nine. Despite this fact, since most students had poor command of English, a considerable care was taken while adapting items to make the language as simple as possible without loosing their original meanings. Also, two TEFL (Teaching English as a Foreign Language) Master's Degree students, who had teaching experience in higher education, were asked to comment on whether the items match the English Language understanding levels of the students. Following the suggestions of these

students, long statements were shortened and some seemingly difficult words were replaced by similar, relevant and simple words. After taking all these steps and putting the items in a random order to reduce response bias, a total of 140 items were presented for the pilot study. Conducting a pilot study was necessary because all of the scales were adapted from scales whose psychometric properties (i.e., reliability and validity) were well-established and these properties may change in the process of adaptation. Richardson (1994) cited in Byrne et al. (1999) asserts that when employing a questionnaire in a situation different from that in which it was originally developed, factor analysis should always be carried out to check that its intended constituent structure can be reconstructed in the new context. In both pilot and main studies of the present research, therefore, factor analysis was employed. Results of the factor analyses for the pilot and main studies are presented in Appendices B and C.

Depending on the results of the pilot study (see Appendix B), 43 items were discarded. The reasons were that while some of the items had loadings of less than .30, the elimination of some others increased reliability. The remaining items were either improved or taken as they were and finally a total of 97 items were used in the main study.

Internal consistency reliability of the scales and subscales within each scale was estimated with Cronbach Alpha ($\alpha$). In the main study, reliability coefficients were respectively .79, .87 and .75 for the full scales of ASSIST, TMSC and AMS. Correlations among subscales within the scales were also computed and most of them were statistically significant. The reliability coefficients of the instruments used in the pilot and main studies are shown in Table 2.

### 3.2.1 Approaches and Study Skills Inventory for Students (ASSIST)

This instrument was used to gather data from the students concerning their approaches to studying. It was adapted from the Approaches and Study Skills Inventory for Students (CRLI, 1997). This inventory has three major subscales - deep, strategic and surface; and 17 minor subscales with a total of 66 items. For the purpose of the present study, only 56 items within 14 minor subscales were adapted. Ten items of the inventory were not included in the present study because compared to others; they were new and in the process of development and the source from which it was adapted suggested that they could be excluded. The internal consistency reliability of the original major subscales - deep, strategic and surface as

estimated by Cronbach alpha were respectively .84, .80 and .87. (For alpha values and factor structures of ASSIST in the present study, see Table 2 and Appendices B and C).

Table 2 Reliability Coefficients (α) of the Scales and Subscales in the Pilot and Main Studies

| Scale or Subscale | Pilot Study | | Main Study | |
|---|---|---|---|---|
| | K* | α | K | α |
| ***Approaches and Study Skills Inventory for Students*** | ***56*** | ***.79*** | ***39*** | ***.79*** |
| Deep Approach to Studying | 20 | .70 | 15 | .75 |
| Strategic Approach to Studying | 16 | .79 | 12 | .63 |
| Surface Approach to Studying | 20 | .69 | 12 | .69 |
| ***Time Management Scale*** | ***56*** | ***.82*** | ***37*** | ***.87*** |
| Making and Following a Schedule | 14 | .55 | 10 | .69 |
| Being Organized in Using Time | 14 | .50 | 10 | .62 |
| Perceived Use of Time to be Purposive | 14 | .44 | 10 | .51 |
| Procrastination | 14 | .53 | 7 | .70 |
| ***Academic Motivation Scale*** | ***28*** | ***.74*** | ***21*** | ***.75*** |
| Amotivation | 4 | .73 | 4 | .74 |
| Extrinsic Motivation | 12 | .74 | 8 | .62 |
| Intrinsic Motivation | 12 | .58 | 9 | .71 |

*K = Number of items

### 3.2.2 Time Management Scale (TMSC)

Time Management Scale was used to gather data about students' time management skills. It was adapted from the Hawaii Time Management Scale (Nelson, 2003). This scale had 245 items with seven main factors and 49 minor time management skill elements. However, only 56 items within four main factors that were relevant to the present study were adapted. The other items were not included because they were more health and job related and therefore, seemed to be not relevant for the present research. The original four main factors containing the elements making and following a schedule, being organized in using time, perceived use

of time to be purposive and procrastination had alpha values of respectively .92, .65, .78 and .80. (For alpha values and factor structures of TMSC in the present study, see Table 2 and Appendices B and C).

### 3.2.3 Academic Motivation Scale (AMS)

Academic Motivation Scale was used to gather data regarding students' academic motivation (i.e., reasons for which they came to university). The scale had a total of 28 items. For the purpose of the present study all of the items were adapted from the Academic Motivation Scale (Vallerand et al., 1992 cited in Areepattamannil, 2006). AMS has three major and seven minor subscales. Amotivation, extrinsic and intrinsic motivation were the three major subscales. The major subscales of the original French version of the scale had alpha values ranging from .76 to .86 while that of its English version varied from .83 to .86. (Vallerand et al., 1992). (For alpha values and factor structures of AMS in the present study, see Table 2 and Appendices B and C).

## 3.3 Data Gathering Procedures

Data gathering procedures for both pilot and main studies started by collecting CGPAs of the students from the university's registrar office (for CGPAs of the students in the main study, see Appendix F). Then, achievement category (Low, Medium and High) was formed for each department using students' CGPAs (see Table 1). Accordingly, students with CGPAs of less than 2.20 were grouped in the low achievement category. This was because these students were under or closer to the academic status of warning or probation. Similarly, students with CGPAs of 3.00 and above were classified in the high achievement category considering the fact that they were at or closer to the academic status of distinction, great distinction and very great distinction. Students whose CGPAs fall between these points (i.e., greater than or equal to 2.20 and less than 3.00) were placed in the medium achievement category. The purpose of this categorization was to minimize the likelihood of over or underselection of students from one achievement level during sampling.

In both the pilot and main studies, the questionnaire was administered to students in the same faculty in a lecture hall by arranging time during which all of them were free. The

questionnaire was administered and collected by the researcher and one of his friends who was an instructor at the university. During the administration, the students were given orientations regarding the purpose of the study, how to respond to the items, the freedom they have to ask any question and to decide not to participate in the study if they want to. Students who needed explanations concerning the items, instructions or the way they should respond to the items were given clarifications.

After collecting data through the questionnaire, six students (five males and one female) were interviewed by the researcher. The purpose of the interview was to collect information so as to supplement the data gathered through the questionnaire. Although it was planned to interview two students (one male and one female) from each achievement category (Low, Medium and High), mostly male students from high achievement category were willing to participate. The interview was conducted in the language that the interviewee preferred (either Amharic or English) in a classroom by arranging convenient time with the interviewees. Later on, for those who responded in Amharic, translation to English was conducted in such a way that, as much as possible, the original meanings were not lost.

### 3.4 Variables of the Study and Methods of Data Analysis

#### 3.4.1 Variables of the Study

In this study, five variables were considered. These were gender, approach to studying, time management skill, motivation and academic performance. Gender was used as independent variable in all analyses. While motivation, approach to studying and time management skill were regarded as dependent variables in gender difference analyses, they were used as independent variables in regression analyses and ANOVA where academic performance was considered as dependent variable. In the regression analyses that involved motivation, approach to studying and time management skill, approach to studying was used as dependent variable while the other two were regarded as independent variables. Moreover, in the regression analyses that involved only motivation and time management skill, motivation was used as independent variable while time management skill was considered as dependent variable.

### 3.4.2 Methods of Data Analysis

Before conducting the analyses, response options of the scales on the questionnaire were given values ranging from Strongly Disagree (1) to Strongly Agree (5). To get a respondent's total scale or subscale scores, rating scores of the respondent to items under the scale or the subscale were summed up. Then, to obtain overall score in the main study, items that positively measured the surface approach to studying (12 items), poor time management skills (17 items) and amotivation (four items) were reversed during scoring so that relatively high overall scores represent adoption of high quality approach to studying, time management skill and motivation. Also to obtain total scores for subscales in the main study, items that negatively measured making and following a schedule (five items), being organized in using time (three items), perceived use of time to be purposive (two items) and procrastination (three items) were reversed during scoring so that relatively high total score on a component represents adoption of high level of that component. Similar scoring procedures were followed in the pilot study. These scoring procedures are in accordance with that of the developers and other studies that employ the scales used in the present study. The exception is that in the present study, the overall scores of the scales were computed. The purposes of the overall scores were (1) to get a unified view of the variables from their respective components, (2) to examine patterns of relationships among the overall scores and (3) to check whether relationships among each of the high quality components and each of the low quality components reflect relations among the overall scores and vise versa. (For classification of items in the main study, see Appendix A).

After preparing raw scores in the above manner, four data analysis techniques were employed. These were factor analysis, correlational and regression analysis, ANOVA and independent samples t-test. For the methods which require one or more of the assumptions of normality, linearity and homoscedastcity, graphical and scatterplot methods (Tabachnick & Fidell, 2001) were employed. After removal of the outliers, these assumptions were tenable justifying the use of the methods. All of the analyses were carried out using the Statistical Package for the Social Sciences (SPSS) version 15.0. Test of significance was set at .05 level and all tests were two-tailed.

### 3.4.2.1 Factor Analysis

This data analysis technique was used to improve the psychometric qualities and to check dimensionality of the scales. Factor analysis gives factor loadings; that is, weights of an indicator (item) on the factors (components of the variables). Researchers often treat loadings greater than or equal to .30 as meaningful (Brace, Kemp & Snelgar, 2006). Thus, after analyzing data from the pilot study, only items with meaningful loadings (≥.30) were included in the final questionnaire. This criterion was also used to extract components of the scales. For factor analysis of the scales in the pilot and main studies, see Appendices B and C.

### 3.4.2.2 Correlational and Regression Analysis

Correlational analysis was used to compute zero-order relationships among approach to studying, time management skill, motivation, their components and academic performance. Regression analysis was used to examine proportion of the variance in academic performance that was explained by approach to studying, time management skill and motivation. Proportion of the variance in approach to studying that was accounted for by time management skill and motivation was also examined using this technique.

### 3.4.2.3 Analysis of Variance (ANOVA)

This method was used to test whether there was a significant difference in the students' academic performance with respect to gender and approach to studying, gender and time management skill, and gender and motivation. Thus, a two-way [2(gender) × 3(Approach to studying), 2(gender) × 4(Time management Skill) and 2(gender) × 3(Motivation)] between subjects univariate analysis of variance was computed. Using Levene's Test for Homogeneity of Variance (Brace, Kemp & Snelgar, 2006), the assumption of homogeneity of variance was tenable and the use of ANOVA was justified. While Type III sum of squares are commonly used in ANOVA both when number of cases are equal and unequal, Type IV sum of squares are specifically used when there are empty cells. Thus, in the present study, Type IV sum of squares were used when analyzing mean differences in academic performance of the students with respect to gender and predominance of scores in different components of time

management skill because there was no predominant female student in the making and following a schedule component (see Appendix E & Table 11).

There seems to be two approaches of analyzing scores from the scales of approach to studying, time management skill and motivation. These are person and variable-oriented analyses. The person-oriented approach to analysis, compared to the traditional variable-oriented analysis has been used recently in the educational literature (Ratelle, Guay, Vallerand et al., 2007). The person-oriented analysis examines how different components of variables combine to produce distinct profiles. But the variable-oriented approach compares individuals by mean and standard deviation of their scores without emphasizing profiles of individuals. That is to say, the variable-oriented analysis focuses on whether an individual's score on one component of a variable is greater or less than an average score, without considering whether the individual gets higher or lower scores on other components or subscales. Thus, the main limitation of variable-oriented analysis that is offset by the person-oriented analysis is that it reduces the simultaneous endorsement of multiple profiles to one dimension. It is the person-oriented analysis of the components of approach to studying, time management skill and motivation as adapted from Biggs (1987) that was used in this study to identify students who predominantly obtained greater than the group's average score on the components of these variables. Then, whether there was significant difference in academic performance with respect to predominance in the components and gender was tested by ANOVA.

#### 3.4.2.4 Independent Samples t-test

This test was used to examine mean difference of male and female students' scores in approach to studying, time management skill, motivation and their components. Using Levene's Test for Equality of Variances (Brace, Kemp & Snelgar, 2006), the equality of variances assumption was tenable and the use of t-test was justified.

The data gathered through interview were analyzed qualitatively by putting them under unifying themes and narrating.

# CHAPTER FOUR

# RESULTS

This chapter summarizes findings of the study. Results are presented in the following order. First, results of data screening and summary statistics for variables of the study will be illustrated. This is followed by presentation of the results of intercorrelations among variables of the study. Proportion of the variance in academic performance that was explained by approach to studying, time management skill and motivation will also be indicated. The chapter concludes with the section that deals with difference in academic performance as a function of gender and approach to studying, gender and time management skill, and gender and motivation.

## 4.1 Results of Data Screening

Before conducting the main data analysis, data were screened for data entry errors, missing data and outliers. Minimum and maximum values, means and standard deviations of items of the questionnaire, and variables of the study were examined using various SPSS procedures. Inconsistent values (e.g., impossible values - numbers outside the range of an item) were corrected and the processes were repeated until no inconsistencies were found. The data obtained from 54 respondents (39 females and 15 males) were found to be incomplete.

On the other hand, using various methods of detecting outliers (e.g. graphical methods-histograms, box plots ...etc), 42 (31 female and 11 male) participants were found to have either univariate or multivariate outliers on their data. Tabachnick and Fidell (2001) suggest deleting cases with outliers and missing data if they seem to be a random subsample of the whole sample. Otherwise, deletion of cases could mean substantial loss of participants and therefore erroneous generalization. In the present study, dropping 96 respondents (54 cases with missing data and 42 cases with outliers) was found to seriously affect the generalizability of the results. This was because the cases could not approximate random or nearly random subsample when the original sample size, 220, was considered as a population. Thus, excluding cases analysis by analysis using SPSS options was preferred. That is, when variables or their components were considered individually, listwise; when two

or more variables or their components were analyzed together, pairwise techniques of excluding cases were employed. These techniques were preferred because, when the cases were excluded analysis by analysis, the number of excluded participants was reduced and found to be relatively nearly random subsample of the original sample.

Accordingly, means (M), standard deviations (SD) and valid cases (N) for the major variables of the study (approach to studying, time management skill, motivation and academic performance) and their components were computed (see Table 3). Table 3 shows that the number of participants (after cases with missing data and outliers were excluded listwise) ranges from 188 to 218. However, in subsequent analyses, the number may fall below this lower limit when two or more analyses run together.

Table 3 Summary Statistics for Variables of the Study

| Variable | N* | M | SD |
|---|---|---|---|
| Approach to Studying (APTS)[a] | 192 | 150.03 | 13.51 |
| Deep Approach to Studying (DP) | 205 | 60.60 | 6.79 |
| Strategic Approach to Studying (STR) | 208 | 50.23 | 5.05 |
| Surface Approach to Studying (SUR) | 209 | 37.62 | 7.64 |
| Time Management Skill (TMS)[b] | 188 | 139.85 | 18.55 |
| Making and Following a Schedule (MFS) | 207 | 38.86 | 5.80 |
| Being Organized in Using Time (BOUT) | 205 | 38.15 | 5.70 |
| Perceived Use of Time to be Purposive (PUTP) | 206 | 26.76 | 3.62 |
| Procrastination (PRO) | 209 | 24.22 | 7.05 |
| Motivation (MO)[c] | 203 | 85.60 | 8.50 |
| Amotivation (AMO) | 213 | 7.96 | 3.72 |
| Extrinsic Motivation (EXMO) | 212 | 33.19 | 3.86 |
| Intrinsic Motivation (INMO) | 208 | 36.54 | 4.58 |
| Cumulative Grade Point Average (CGPA)[d] | 218 | 2.58 | 0.58 |

[a, b, c, d]Maximum and Minimum scores were respectively 187,184, 104, 4.00 and 114, 103, 61, 1.75

*Missing values and outliers were excluded listwise

## 4.2 Interrelationships of Approach to Studying, Time Management Skill, Motivation and Academic Performance

This section addresses the research question that inquires significance of the relationships of approach to studying, time management skill, motivation and academic performance. As shown in Table 4, zero-order correlations were computed for major variables of the study. Of the six correlations that involve approach to studying, time management skill, motivation and academic performance, five were statistically significant. Positive, low to moderate and significant ($p<.01$) correlations were found among approach to studying, time management skill, motivation and academic performance except that of CGPA and motivation, which was not statistically significant. The strongest correlation was observed between approach to studying and time management skill ($r = .71$). The correlation between CGPA and motivation ($r = .11$) was the weakest.

Table 4 Zero-Order Intercorrelations for Approach to Studying (APTS), Time Management Skill (TMS), Motivation (MO) and CGPA (N = 166 to 205)

| | APTS | TMS | MO |
|---|---|---|---|
| TMS | .71** | | |
| MO | .44** | .47** | |
| CGPA | .51** | .45** | .11 |

**p< .01

Zero-order correlations among academic performance and the components of the major variables of the study were also computed and presented in Table 5. Of the 43 correlations that involve academic performance and components of approach to studying, time management skill and motivation, 39 were statistically significant. Though statistically significant, magnitudes of most of the correlations were found to be low.

Correlations among the components of approach to studying and time management skill were all significant. As scores on the high quality components of time management skill (Making and Following a Schedule, Being Organized in Using Time and Perceived Use of Time to be Purposive) increased, scores on the high quality components of approach to studying (Deep

and Strategic) also increased significantly ($p<.01$). Likewise, as scores on the deep and strategic approaches increased, score on procrastination decreased significantly and vise versa ($p<.01$). However, surface approach and procrastination were positively and significantly linked ($r = .49$, $p<.01$).

In the same manner, extrinsic and intrinsic motivation were positively and significantly associated to deep and strategic approaches ($p<.01$). But deep and strategic approaches were found to be negatively and significantly related to amotivation ($p<.01$). There was positive and significant correlation ($r = .41$, $p<.01$) between surface approach and amotivation. Likewise, surface approach was positively and significantly related to extrinsic and intrinsic motivation ($p<.01$).

Similarly (see Table 5), as scores on making and following a schedule, being organized in using time and perceived use of time to be purposive increased, scores on extrinsic and intrinsic motivation showed substantial increase ($p<.01$ or $p<.05$). In addition, scores on high quality components of time management skill were negatively and significantly correlated with score on amotivation ($p<.01$). Amotivation and procrastination were found to correlate positively and significantly ($r =.54$, $p<.01$).

Once again, deep and strategic approaches were positively and significantly ($p<.01$) associated to CGPA. But surface approach was negatively and significantly related to CGPA ($r = -.42$, $p<.01$). Similarly, making and following a schedule, being organized in using time and perceived use of time to be purposive were found to be positively and significantly related to CGPA ($p<.01$). But a negative and significant correlation ($r = -.53$, $p<.01$) was observed between procrastination and CGPA. By examining the relation between components of motivation and academic performance, we also observe that the low quality and nonself-determined component of motivation (Amotivation) was negatively and significantly linked to academic performance ($p<.01$).

Table 5 Zero-Order Intercorrelations for CGPA and Components of Approach to Studying (APTS) Time Management Skill (TMS) and Motivation (MO) (N = 190 to 214)

| | APTS | | | TMS | | | | MO | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | DP | STR | SUR | MFS | BOUT | PUTP | PRO | AMO | EXMO | INMO |
| MFS | .34** | .43** | -.26** | | | | | | | |
| BOUT | .43** | .49** | -.36** | | | | | | | |
| PUTP | .22** | .31** | -.20** | | | | | | | |
| PRO | -.31** | -.40** | .49** | | | | | | | |
| AMO | -.23** | -.23** | .41** | -.48** | -.47** | -.31** | .54** | | | |
| EXMO | .35** | .33** | .17** | .32** | .22** | .31** | -.11 | | | |
| INMO | .42** | .25** | .25** | .19** | .15* | .12** | .08 | | | |
| CGPA | .24** | .28** | -.42** | .27** | .46** | .25** | -.53** | -.49** | -.06 | -.09 |

*P<.05 **P< .01

## 4.3 Proportion of the Variance in Academic Performance that is Explained by Approach to Studying, Time Management Skill and Motivation

In this section, the research question that addresses proportion of the variance in academic performance that is accounted for by approach to studying, time management skill and motivation will be considered. Besides, changes in approach to studying that were accounted for by time management skill and motivation will be presented as supplemental exploratory results. To run the analyses, simple and stepwise multiple regression analyses were used. Stepwise regression analysis was used because the intention was to find out which independent variable (s) account for maximum variance in the dependent variable.

In the first set of regression analyses, approach to studying, time management skill and motivation were entered in the equations to determine variations in academic performance that they explained and their corresponding standardized beta weights. Beta weights were used to examine relative contributions of the independent variables.

As shown in Table 6, stepwise regression analyses revealed a statistically significant model for approach to studying ($F = 56.37$, $p<.05$). This model explained 25% of proportion of the variance in academic performance. Although approach to studying ($\beta = .51$, $p<.05$) contributed more, through simple regression analysis, time management skill ($\beta = .45$, $p<.05$) was found to contribute significantly to academic performance (Adjusted $R^2 = .21$). However, simple regression analysis showed that the independent contribution of motivation to academic performance was the least (Adjusted $R^2 = .01$).

Also multiple regression analysis showed a statistically significant model for approach to studying and motivation ($F = 30.90$, $p<.05$). This model explained 27% of the variance in academic performance which was greater than the variance accounted for by the other pair models (see Table 6). In this model, approach to studying contributed more to academic performance ($\beta = .57$, $p<.05$) than motivation ($\beta = -.15$, $p<.05$). Although the addition of motivation on approach to studying substantially increased the explained variance in academic performance ($R^2$ Change = .02, $p<.05$) because coefficient of determination does not consider the sign of correlation, beta indicated that a unit increase in motivation was accompanied by a .15 decrease in academic performance and vise versa.

Table 6 Summary of Stepwise Regression Analyses for Variables Related to Academic Performance (N = 166)

| Variable | β | R | $R^2$ | $R^2$ Change | Adjusted $R^2$ | F |
|---|---|---|---|---|---|---|
| APTS | .51* | .51 | .26 | .26 | .25 | 56.37* |
| APTS<br>MO | .57*<br>-.15* | .52 | .27 | .02* | .27 | 30.90* |
| APTS<br>MO<br>TMS | .44*<br>-.20*<br>.22* | .54 | .30 | .02* | .28 | 22.83* |

*p< .05

Regression analyses also produced a significant model for approach to studying, time management skill and motivation ($F = 22.83$, $p<.05$). This model accounted for the largest variance (adjusted $R^2 = .28$) in academic performance (see Table 6). The addition of time

management skill on approach to studying and motivation substantially increased the explained variance in academic performance ($R^2$ Change = .02, p<.05). In fact, approach to studying (β =.44, p<.05), time management skill (β =.22, p<.05) and motivation (β = -.20, p<.05) were found to significantly explain difference in academic performance. However, contribution of motivation in the context of these variables was again found to be in the opposite direction.

In the second set of regression analyses, time management skill and motivation were entered in the equations to determine proportion of the variance in approach to studying that they explained (see Table 7). The model for time management skill was found to be statistically significant (F = 170.69, p<.05) and accounted for 51% of proportion of the variance in approach to studying which was by far greater than that of motivation (Adjusted $R^2$ = .19). Also simple regression analysis indicated a statistically significant model for motivation (F = 48. 04, p< .05) which was able to explain 22% of proportion of the variance in time management skill with significant beta coefficient (β = .47, p<.05).

In the same manner, stepwise regression analysis revealed a statistically significant model for time management skill and motivation (F = 90.46, p<.05). This model accounted for the largest proportion of the variance (adjusted $R^2$ = .52) in approach to studying. Also time management skill contributed more (β = .65, p<.05) than motivation (β = .14, p<.05) to approach to studying. But addition of motivation substantially increased proportion of the variance explained ($R^2$ Change = .02, p< .50).

Table 7 Summary of Stepwise Regression Analysis for Variables Related to Approach to Studying (N = 166)

| Variable | β | R | $R^2$ | $R^2$ Change | Adjusted $R^2$ | F |
|---|---|---|---|---|---|---|
| TMS | .71* | .71 | .51 | .51 | .51 | 170.69* |
| TMS | .64* | | | | | |
| MO | .14* | .72 | .52 | .02* | .52 | 90.46* |

*p< .05

### 4.4 Gender Difference in Approach to Studying, Time Management Skill and Motivation

Whether gender difference exists in the overall score of approach to studying, time management skill and motivation was examined by a t-test. The results are presented in Table 8. There was a considerable gender difference ($t = 4.050$, $p<.05$) in approach to studying. That is, male students (Mean = 153.68) received significantly higher scores than female students (Mean = 146.08). Closer examination revealed that male students obtained significantly higher scores than their female counterparts in the deep ($t = 2.14$, $p<.05$) and strategic ($t = 2.28$, $p<.05$) components of approach to studying. But, female students got significantly higher scores than male students in the surface approach ($t = - 4.65$, $p<.05$).

A statistically significant gender difference was also found in time management skill ($t = 4.052$, $p<.05$). To be more specific, male students (Mean = 145.23) received significantly higher scores than female students (Mean = 134.69). Closer examination indicated significant gender difference in the components of time management skill. That is, male students received significantly higher scores in making and following a schedule ($t = 1.97$, $p<.05$), being organized in using time ($t = 3.55$, $p<.05$) and perceived use of time to be purposive ($t = 3.00$, $p<.05$) than female students. However, female students received significantly higher scores than male students in procrastination ($t = - 4.55$, $p<.05$).

Although no significant gender difference was found in the overall score of motivation, female students obtained significantly higher scores in intrinsic motivation ($t = - 2.25$, $p<.05$) and amotivation ($t = - 4.92$, $p<.05$) than male students. This finding seemed to be logically inconsistent because a person or group of persons may not be motivated and amotivated on the same activity at the same time. But closer examination through simultaneous comparison of their mean scores on amotivation and intrinsic motivation components revealed that female students (Mean = 13.00) got significantly higher scores ($t = - 4.29$, $p<.05$) on amotivation than male students (Mean = 9.33). Nevertheless, no significant gender difference was found between students who were predominantly intrinsically motivated.

Table 8 t-Test for Gender Difference in the Overall Score of Approach to Studying, Time Management Skill and Motivation

| Variable | Sex | N | Mean | SD | t |
|---|---|---|---|---|---|
| Approach to Studying | Male | 100 | 153.68 | 14.16 | 4.050* |
| | Female | 92 | 146.08 | 11.60 | |
| Time Management Skill | Male | 92 | 145.23 | 18.26 | 4.052* |
| | Female | 96 | 134.69 | 17.42 | |
| Motivation | Male | 98 | 85.77 | 8.83 | .273 |
| | Female | 105 | 85.44 | 8.22 | |

*P< .05

## 4.5 Difference in Academic Performance as a Function of Gender and Approach to Studying, Gender and Time Management Skill, and Gender and Motivation

The research question dealt with in this section inquires whether significant differences exist in academic performance with respect to gender and approach to studying, gender and time management skill, and gender and motivation. As pointed out in chapter three, number of students who predominantly obtained higher scores in a specific component of approach to studying, time management skill and motivation was computed by considering cases with greater than average score on the component and less than or equal to average score on other components (for calculation of predominant scores, see Appendix E).

As can be observed in Table 9, a total of 59 (31 male and 28 female), 61 (29 male and 32 female), and 62 (32 male and 30 female) students respectively showed predominance in the components of approach to studying, time management skill and motivation. Moreover, as we move from deep to surface approach, from making and following a schedule to procrastination and from intrinsic motivation to amotivation in Table 9, we observe that number of students increases; with surface approach (57%), procrastination (70%) and amotivation (47%) receiving the largest number of students from those who showed predominance in the respective variables. Thus, number of students predominantly adopting low quality approach to studying (Surface = 34) was found to be more than number of

students who tended to adopt high quality approaches (Deep and Strategic = 25) by about one-third. Likewise, number of students predominantly practicing low quality time management skill ( Procrastination = 43) was greater than number of students who tended to adopt high quality time management skills ( Making and Following a Schedule, Being Organized in Using Time, and Perceived Use of time to be Purposive =18) by more than half. Also number of predominantly amotivated students (29) was found to be considerably greater than number of students who tended to be intrinsically motivated (16).

Table 9 Number of Students Predominant in the Components of Variables of the Study by Gender

| Variables | | Gender | | | | *Total* | |
|---|---|---|---|---|---|---|---|
| | | Male | | Female | | | |
| | | No. | % | No. | % | No. | % |
| Approach to Studying | DP | 7 | 12 | 4 | 7 | 11 | 19 |
| | STR | 8 | 14 | 6 | 10 | 14 | 24 |
| | SUR | 16 | 27 | 18 | 30 | 34 | 57 |
| *Total* | | *31* | *53* | *28* | *47* | *59* | *100* |
| Time Management Skill | MFS | 6 | 10 | | | 6 | 10 |
| | BOUT | 7 | 12 | 2 | 3 | 9 | 15 |
| | PUTP | 2 | 3 | 1 | 2 | 3 | 5 |
| | PRO | 14 | 23 | 29 | 47 | 43 | 70 |
| *Total* | | *29* | *47* | *32* | *53* | *61* | *100* |
| Motivation | INMO | 8 | 13 | 8 | 13 | 16 | 26 |
| | EXMO | 12 | 19 | 5 | 8 | 17 | 27 |
| | AMO | 12 | 19 | 17 | 28 | 29 | 47 |
| *Total* | | *32* | *52* | *30* | *48* | *62* | *100* |

Although number of students increased following the trend specified in Table 9, closer examination of the data indicated that the total mean CGPAs decreased in the same direction for all components.

There is a decrease in the total mean CGPAs as we move from students who tended to adopt deep approach to those who tended to adopt surface approach to studying (see Figure G1 in Appendix G). Moreover, one can also observe from Table 10 that mean CGPAs for both male and female students generally decreased in the same direction. Whether this decrease in

the CGPAs was significant for the main effects of gender and approach to studying; and their interaction was tested by a 2 (gender) X 3 (approach to studying) between subjects univariate ANOVA. This test revealed only significant main effect for approach to studying, $F(2, 53) = 3.39$, $p<.05$. This significant main effect was followed by Scheffe's post hoc test. The test indicated that students who tended to adopt deep approach to studying had significantly higher CGPAs (Mean = 2.92) than those who tended to adopt surface approach to studying (Mean = 2.41).

Table 10 Mean CGPAs (M) and Standard Deviations (SD) for Students Predominant in the Components of Approach to Studying

| **Approach to Studying** | **Gender** | | | | | |
|---|---|---|---|---|---|---|
| | **Male** | | **Female** | | ***Total*** | |
| | **M** | **SD** | **M** | **SD** | ***M*** | ***SD*** |
| Deep Approach to Studying | 3.00 | .68 | 2.77 | .36 | *2.92* | *.57* |
| Strategic Approach to Studying | 3.05 | .59 | 2.44 | .53 | *2.79* | *.63* |
| Surface Approach to Studying | 2.45 | .61 | 2.37 | .57 | *2.41* | *.58* |
| *Total* | *2.73* | *.66* | *2.44* | *.54* | | |

On the other hand, interviewees reported that they tended to use the strategic approach to studying more often. Here is an excerpt from the interview.

> *If there is no test or examination, my study is not from the bottom of my heart. ... still now I ask my seniors for information regarding the behavior of the lecturer who had been teaching them and assigned for us; the examination types he likes more (essay, choice...) and for lecture notes and handouts they were given for the same course. ... While doing assignments, to find points that lecturers require to be included, I can say, there is no book that I do not refer.*
>
> (High Achieving Student, Department of Sociology)

Also it appears that the students adopted the strategy of relying on their seniors for information about examinations in search for the easiest path of success. Regarding this, low achieving student from English Department said, "... our seniors prepare us for examinations at least by suggesting topics that were asked in essay, choice or completion item types."

Adopting such strategic approaches to studying may help students to get good grades. This was evidenced in the interview with a high achieving student from Accounting Department who said, "I ask my seniors how to get good grades. ... When examination days approach, I concentrate on my studying very much (sometimes throughout the night) and now I have a good cumulative grade point average."

In some circumstances, instructional contexts may hinder the adoption of deep approach to studying. In relation to this, high achieving student from Department of Sociology said, "I have interest for reading deeply to understand some topics; however, the situation is not conducive. Some lecturers tell us that questions from the topics will not appear on tests or examinations." However, instructional contexts may not always hinder the adoption of deep approach to studying. This was indicated by high achieving student from English Department who said, "If your appetite is open, that is, if your feeling is well, if you are willing to do, you may read beyond the topics assigned."

When we re-examine the case of students predominant in different variables of the study, Table 9 indicates that as we move from students who tended to have effective time management skills (Making and Following a Schedule) to those who tended not to manage their time well (Procrastination), the number of students generally increase. But closer examination of the data revealed that their total mean CGPAs decreased in the same direction (see Figure G2 in Appendix G). A general decreasing trend in the mean CGPAs for both male and female students is also evident from Table 11. To check whether this decreasing trend was statistically significant with respect to the main effects of gender and time management skill, and their interaction, a 2 (gender) X 4 (time management skill) between subjects univariate ANOVA was run. The test found only a significant main effect for time management skill, $F(3, 54) = 2.94$, $p<.05$. This significant main effect was also followed by Scheffe's post hoc comparison procedure. The comparison test showed that students who tended to manage their time by making their own schedules and following them (Mean = 3.05), and those who were predominant in organized use of their time (Mean = 2.95) had significantly higher CGPAs than those who tended to procrastinate (Mean = 2.32).

Table 11 Mean CGPAs (M) and Standard Deviations (SD) for Students Predominant in the Components of Time Management Skill

| Time Management Skill | Gender | | | | | |
|---|---|---|---|---|---|---|
| | Male | | Female | | *Total* | |
| | M | SD | M | SD | *M* | *SD* |
| Making and Following a Schedule | 3.05 | .75 | | | *3.05* | *.75* |
| Being Organized in Using Time | 3.09 | .41 | 2.46 | .65 | *2.95* | *.51* |
| Perceived Use of Time to be Purposive | 2.88 | 1.24 | 2.39 | | *2.71* | *.92* |
| Procrastination | 2.44 | .45 | 2.27 | .43 | *2.32* | *.44* |
| *Total* | *2.75* | *.62* | *2.28* | *.43* | | |

On the other hand, interview with some students indicated that they vary in their time management skills. Some students had good conception of time and tended to manage it well. Regarding this, high achieving student from English Department said, "Because I believe that time is one dimensional-that is, once it is passed, it is passed for ever; I start studying about two weeks after the beginning of a semester and study throughout it." However, as indicated in the following extract from interview, some of the students tended not to manage their time well.

> *If you begin doing assignments as soon as they are given, and finish long before their submission dates, you cannot compare your work with that of others and include more important points as they did; because most students do not begin early. ... also, I start my actual study when examination schedules are posted or tests are announced.*
>
> (Medium Achieving Student, Psychology Department)

Once again, when we examine Table 9, we observe that there is an increase in number as we move from students who tended to be intrinsically motivated (most self-determined) to those who tended to be amotivated (nonself-determined). Closer examination of the students' data in this case also showed that their total mean CGPAs decreased in the same direction (see Figure G3 in Appendix G). Besides, Table 12 shows that the mean CGPAs for both male and female students decrease in a similar pattern. Whether this decrease in CGPAs was statistically significant with respect to the main effects of gender and motivation, and their interaction was tested by a 2 (gender) X 3 (motivation) between subjects univariate ANOVA.

As in the cases of approach to studying and time management skill, this test also found only a significant main effect for motivation, $F(2, 56) = 5.80$, $p<.05$. Scheffe's post hoc comparison procedure for this significant main effect indicated that students who tended to be intrinsically motivated (Mean = 2.97) had significantly higher CGPAs than those who tended to be amotivated (Mean = 2.41).

Table 12 Mean CGPAs (M) and Standard Deviations (SD) for Students Predominant in the Components of Motivation

| Motivation | Gender | | | | | |
|---|---|---|---|---|---|---|
| | Male | | Female | | *Total* | |
| | **M** | **SD** | **M** | **SD** | ***M*** | ***SD*** |
| Intrinsic Motivation | 3.12 | .47 | 2.82 | .56 | *2.97* | *.52* |
| Extrinsic Motivation | 2.81 | .67 | 2.75 | .71 | *2.79* | *.66* |
| Amotivation | 2.62 | .54 | 2.26 | .25 | *2.41* | *.43* |
| *Total* | *2.82* | *.59* | *2.49* | *.50* | | |

On the other hand, regarding purposes for which they came to university (hence their motivation), the students appeared to be more oriented towards the self-determined (Extrinsic or Intrinsic) forms of motivation. This was reported by high achieving student from Sociology Department who said, "... now days, I believe that, without a university degree or some kind of certificate, thinking of good life is difficult." Similar reasoning can be found in the report of medium achieving Amharic Department student who said, "I came to university in order to have good knowledge and good life. ... That is why I read more for knowledge and good grades; I do not get satisfied with only what I learn in the class."

The main effects for gender in Tables 10, 11 and 12 were nonsignificant. This indicates that students who tended to have high quality approaches to studying (Deep and Strategic) and time management skills (Making and Following a Schedule, Being Organized in Using Time, and Perceived Use of Time to be Purposive) and who tended to be motivated either intrinsically or extrinsically had better CGPAs (regardless of gender) than those with low quality (Surface Approach, Procrastination and Amotivation) components of these variables.

# CHAPTER FIVE

# DISCUSSION

This chapter builds on the previous chapter to provide a more in-depth interpretation of the results. The chapter addresses findings in terms of the research questions. It also deals with limitations and implications of the study for future research and practice.

## 5.1 Interrelationships of Approach to Studying, Time Management Skill, Motivation and Academic Performance

The central research question of the present study focused on significance of relations among approach to studying, time management skill, motivation and academic performance. In general, positive, low to moderate and significant correlations were found among the overall scores of approach to studying, time management skill and academic performance. This finding suggests that students who practice good time management skills and who adopt high quality approaches to studying had performed better academically than students with poor time management skills and low quality approaches to studying. However, no significant link was found between motivation and cumulative grade point average (CGPA).

The above results are generally consistent with the research literature. High quality approaches to studying and good study habits were found to be positively related to academic performance while the relation between low quality approach and performance was negative (CRLI, 1997; Brown & Holzsman, 1966 cited in Rutkowski & Domino, 1975). In the same manner, positive relations were found between good time management skills and academic performance (Macan et al., 1990; Britton & Tesser, 1991; De Volder & Lens, 1982). Entwistle (1992) reported a functional relationship linking approach to learning and the number of hours spent studying. He further indicated that students adopting high quality study approach put in longer hours of independent studying. Also Bond and Feather (1988) found positive and significant correlation between good study habit and use of time. Moreover, extrinsically motivated students were found to adopt low quality approach whereas intrinsically motivated students tended to adopt high quality approaches to studying (Fransson, 1977; Beckwith, 1991). Furthermore, while Ahmed (2007) suggested that what

makes a person practice good time management skills is the fact that he or she is motivated to do a task, Conti (2001) found that time perception was an important dimension of motivational experience.

In the same manner, mostly statistically significant and weak correlations were found among the components of approach to studying, time management skill, motivation and academic performance. These findings will be addressed in the following subsections.

### 5.1.1 Relationships among Components of Approach to Studying and Time Management Skill

Correlations among high quality components of time management skill (Making and Following a Schedule, Being Organized in Using Time and Perceived Use of Time to be Purposive) and high quality components of approach to studying (Deep and Strategic) were all positive and significant. These findings imply that students who practice good time management skills tend to adopt high quality approaches to studying. Moreover, the results indicate that students who tend to adopt high quality approaches to studying also tend to practice good time management skills.

The above results are similar to other research findings (Entwistle, 1992; Siddiqui, 2006) which indicated that students who adopt effective time management strategies also adopt high quality approaches to their learning. Similarly, the finding that deep and strategic approaches were related negatively and significantly to procrastination imply that students adopting high quality approaches to studying are effective in their time management and tend not to procrastinate while students who tend to procrastinate adopt surface approach to studying. These results are consistent with some studies which reported that academic procrastination is associated with less effective learning strategies and unplanned study habits (Elmer, 2000 & Akinsola et al., 2007).

A more detailed explanation for the relation between less effective study strategies (low quality approach to studying) and poor time management skills would come from the finding that procrastination was positively and significantly related to surface approach to studying. That is to say, students who tended to procrastinate were likely to adopt surface approach to

studying than those who reported low scores on procrastination. Besides, students who tended to adopt surface approach seemed to procrastinate more than those who tended to adopt high quality approach to studying. These results are similar to other findings that students who adopt the surface approach only memorize information needed for assessments and that they may engage in these behaviors (cramming for exams) as a result of procrastination (Lublin, 2003; Gardner & Jewler, 1997).

### 5.1.2 Relationships among Components of Approach to Studying and Motivation

High quality components of motivation (Extrinsic and Intrinsic Motivation) were found to be positively and significantly related to high quality components of approach to studying (Deep and Strategic). In other words, students who tended to be either intrinsically or extrinsically motivated tended to adopt high quality approaches to studying than those who reported low scores on intrinsic and extrinsic motivation. This finding could also imply that students who tended to adopt high quality approaches had higher qualities of motivation than those who reported low scores on the deep and strategic approaches. Additional explanations for these results could be the finding that students who tended to adopt high quality approaches to studying also reported low scores on the low quality component of motivation (Amotivation) and vise versa implying that high quality approaches to studying are accompanied by high quality motivation. Indeed, positive and significant correlation found between surface approach and amotivation indicates that students who tended to be amotivated also tended to adopt surface approach to studying and vise versa.

Similar findings to the above results were reported by other investigators. Under different conditions of extrinsic and intrinsic motivation, extrinsically motivated students were found to show a strong tendency to choose surface level processing. But deep learning seemed to be the usual study strategy chosen by an intrinsically motivated student (Fransson, 1977). In other studies (Christenson, Massey & Isaacs, 1991; Entwistle, 1993), deep approach to studying was found to be coupled with intrinsic motivation while the surface approach was comprised of motivation through fear of failure, lack of interest in academic tasks and attempts to gear learning to anticipated questions. Furthermore, Entwistle (1994) indicated that the roots of deep approach was intrinsic educational orientation and a sophisticated

conception of learning while surface approach seemed to be derived from an extrinsic orientation and a simple conception of learning as memorization. Although most of these studies found strong positive relationships between surface approach and extrinsic motivation, probably because amotivation was not disseminated as one subscale of motivation at the time of the study or the researchers did not study it from the self-determination theory perspective, the present study found the magnitude of the relation between amotivation and surface approach ( r = .41) to be more than twice of the magnitude of the relation between surface approach and extrinsic motivation ( r = .17). This indicates that surface approach is more strongly associated with amotivation than with extrinsic motivation. Nevertheless, the present study replicated results of previous research by finding positive and significant relations between extrinsic motivation and the surface approach. In general, the findings that relative to amotivation, extrinsic and intrinsic motivation, more strong relations were found between (1) deep approach and intrinsic motivation (2) strategic approach and extrinsic motivation and (3) surface approach and amotivation probably indicate that amotivated, extrinsically and intrinsically motivated students tend to respectively adopt surface, strategic and deep approaches to studying.

### 5.1.3 Relationships among Components of Time Management Skill and Motivation

High quality components of time management skill (Making and Following a Schedule, Being Organized in Using Time and Perceived Use of Time to be Purposive) were found to vary systematically and significantly with high quality components of motivation (Intrinsic and Extrinsic Motivation) in the same direction. That is, students who tended to practice good time management skills seemed to be motivated more than those who reported low scores on the high quality components of time management skill. In addition, students who tended to have high quality motivational orientations seemed to have effective time management skills than those who reported low scores on the high quality components of motivation. Likewise, the finding that high quality components of time management skill were related negatively and significantly to amotivation implies that students who tend to practice good time management skills tend to be amotivated less than those with poor time management skill. This finding also shows that students with less effective time management skills are likely to be more amotivated. These results could be supported by the finding that

procrastination and amotivation were positively and significantly related. That is, the more amotivated the students are, the more they procrastinate, and the less they are amotivated, the less they procrastinate.

The above results are in line with findings and suggestions in the research literature. It was found out that for students who were neither intrinsically nor extrinsically motivated (i.e., amotivated), academic procrastination was likely (Tice & Baumeister, 1997 cited in Brownlow & Reasinger, 2000). Similarly, procrastination was found to be positively and significantly related to amotivation (Senecal, Koestner & Vallerand, 1995). Besides, Senecal et al. concluded that procrastination is a motivational problem that involves more than poor time management skills. Moreover, it was suggested that people who manage their time well are people who have the motivation to finish a task and prioritize what is really needed and that it is difficult to imagine effective time management practices without motivation (Ahmed, 2007).

### 5.1.4 Relationships among Academic Performance and Components of Approach to Studying, Time Management Skill and Motivation

The positive and significant associations found between high quality components of approach to studying (Deep and Strategic) and academic performance indicate that students who adopt high quality approaches are more likely to perform better academically than those who adopt low quality approach. This finding also implies that academically better students are likely to be high quality approach adopters than those who tend to be less effective in their academic performance. Further evidence could come from the negative and significant relation found between surface approach and CGPA. That is, the more the students adopt surface approach to studying, the less their academic performance and vise versa.

The above findings are consistent with existing research literature. Disorganized study methods were found to be significantly associated with low marks and surface level learning strategies were major indicators of low grades (Watkins, 1986). Besides, high quality approaches to learning were found to be positively and significantly related to grade point average (Gadzella, Ginther & Williamson, 1987).

The positive and significant relation found between high quality components of time management skill (Making and Following a Schedule, Being Organized in Using Time and Perceived Use of Time to be Purposive) and CGPA indicates that the more students practice effective time management skills, the more they become successful academically and that the less they practice effective time management skills, the less their performance. Explanation for this finding could also be enriched by probing into the link between procrastination and CGPA which was negative and significant. That is to say, the more the students procrastinate, the lower their CGPA and vise versa.

The above results are generally consistent with other findings. High achievers reported that they organized their studying and time allocations, worked during free periods and decided on priorities while low achievers did not consider these points to be important. This eventually led to the conclusion that better-organized students were able to adapt their approach to overcome defects in the academic environment and to maintain a more positive attitude to their studies, while low achievers sought to excuse their poor performance (Pond, 1964 cited in Entwistle et al., 1974). Similarly, procrastination was assumed to influence performance since the time pressure caused by the delay can decrease punctuality or accuracy (Von Eerde, 2003). Furthermore, Elmer (2000) found that academic procrastination was associated with lower grade point averages.

The negative and significant relation found between amotivation and academic performance implies that the more the students are amotivated, the less they perform academically. Moreover, the finding shows that if students' performance is well, chances are that they are less amotivated. This result is similar to that of other investigators (Vallerand et al., 1993; Baker, 2004 cited in Legault, Green-Demes & Pelletier, 2006). In these studies, amotivation was associated with boredom and poor concentration in class, poor psychological adjustment to college and higher perceived stress at school and while studying all of which lead to poor academic performance.

However, the nonsignificant relations found between CGPA and the overall score of motivation, and its high quality components (Extrinsic and Intrinsic Motivation) are inconsistent with the theoretical standpoint of motivation (or self-determination theory, SDT)

that is used in the present study. According to SDT (Ryan & Deci, 2000; Legault et al., 2006) more autonomous or self-determined forms of motivation (extrinsic and intrinsic motivation) are considerably associated with more engagement and better academic performance.

Although it needs further investigation in our context, one possible explanation for the nonsignificant relationship found between CGPA and overall score of motivation, and its high quality components would be that students carry out their academic activities better when they feel that they are controlled (probably by their parents or teachers) than when they feel that they control themselves. In the present study, motivation was measured from the perspective of SDT in such a way that amotivation, extrinsic and intrinsic motivation are respectively nonself-determined, more self-determined and most self-determined forms of motivation and that the more the overall score on motivation, the more self-determined a student was. Many students in this study tended to be self-determined than non-self-determined probably because they were relatively free from the controlling effects of parents and teachers which they experienced at high school. This control may help students to focus on their academic activities and improve their performance. But in a university, they may be relatively free from these influences probably because of which relation between their motivation and academic performance was nonsignificant. The finding that many students tended to be self-determined than non-self-determined could be enriched by an other finding that for the total sample, relatively small number of students ( 99, 46%) had greater than average scores on amotivation and many students reported high scores on the most self-determined form of motivation-intrinsic motivation (155, 76%). Besides, interview conducted with some students indicated that they pursue their studies to live good life later on, to get good grades and good knowledge and therefore more oriented towards the self-determined forms of motivation. Overall, the present data revealed that many students' motivational orientation tends to be toward the self-determined forms of motivation. This indicates that students pursue their studies and execute their academic activities in a self-determined manner. However, relation of such motivation and academic performance was found to be negligible.

We also observe that relatively more students tend to be predominantly self-determined (Extrinsic and Intrinsic = 33) than nonself-determined (Amotivation = 29) in their

motivational orientations. However, closer examinations of these components indicated that, even though self-determined students had higher CGPAs than nonself-determined ones, the relations between self-determined motivational components and academic performance (Extrinsic Motivation and CGPA, r = -.022, Intrinsic Motivation and CGPA, r = -.060) were also nonsignificant. This is so probably because little or none of the students' self-determined motivational energy was invested on academic activities.

Another possible explanation for the nonsignificant relationship found between CGPA and self-determined motivational components could come from closer examination of the positive and significant relation found between surface approach and intrinsic motivation. Although contrary to what is expected, this finding implies that the more students are intrinsically motivated (intrinsic motivation is the most self-determined form of motivation); the more they adopt surface approach to studying and vise versa. However, as discussed earlier, either in the present study or other studies, negative and significant relation was found between surface approach and academic performance. This implies that although they tend to be most self-determined in their motivational orientation, probably the students adopted less effective study strategies and therefore obtained lower grades. In universities or colleges, ineffective utilization of motive power through ineffective study habits could contribute to academic failure (Entwistle et al., 1974).

Similar explanation could be given by examining the relation between intrinsic motivation and procrastination. One would expect a negative relationship between procrastination and intrinsic motivation because research (Senecal et al., 1995) has demonstrated that procrastination is linked negatively and significantly to intrinsic motivation. This indicates that students with intrinsic reasons for pursuing academic tasks procrastinate less. However, in the present research, nonsignificant positive relationship was found between procrastination and intrinsic motivation. Yet, procrastination was found to be negatively and significantly related to academic performance. This indicates that the more the students were self-determined, the less they performed and vise versa. Thus, although they tended to be most self-determined in their motivational orientation, the students were procrastinating and therefore obtained lower grades.

The third possible explanation could come from Ryan and Deci's (2000) notion that people will be intrinsically motivated (most self-determined) only for the activities that hold intrinsic interest to them. From this, it may follow that self-determined students may not have interest in studying all courses and therefore select specific courses and study them (note that significant positive relations were found between deep or strategic approach and intrinsic motivation in the present study). But, CGPA is a linear combination of grades obtained in all courses. Thus, it is likely that these students got good grades only in specific courses and probably low grades in others, which could give rise to the nonsignificant relations found between self-determined motivational orientations and CGPAs.

Indeed, the above explanations could get support from one study that was conducted in our country's context. Amare (2001) found a nonsignificant correlation between academic self-determination and performance. Although contrary to results reported by other investigators, he indicated that the more students were controlled by teachers to do their tasks, the more they would persist in doing what they are assigned to do. Even though this result was found at high school level, one would expect that students in a university (as in the present study) tend to feel more self-determined and less controlled in carrying out their academic activities because they are relatively free from the influence of parents and teachers. That is, the academic environment of a university allows students much more freedom to plan and execute their own work than high schools where students tend to be dependent on teachers to organize studying for them and learning materials are generally presented in a carefully prepared form (Entwistle, 1994). This freedom could have a detrimental effect on academic progress if students cannot adopt effective approaches to studying and manage themselves to focus on academic activities. In the same manner, Areepattamannil (2006) found that various intrinsic and extrinsic motivation subscales did not significantly correlate with grade point averages, which was contrary to self-determination theory.

## 5.2 Proportion of the Variance in Academic Performance that is Explained by Approach to Studying, Time Management Skill and Motivation

Having looked at the relationships among approach to studying, time management skill, motivation and academic performance, the next logical question may be: What proportion of the variance in academic performance do these variables account for? This was the second question of the present study.

As demonstrated in the preceding chapter, the regression model for approach to studying was able to explain a large variance (Adjusted $R^2$ = .25) in academic performance followed by time management skill (Adjusted $R^2$ = .21). However, the model for motivation was not significant and it explained very small proportion of the variance (Adjusted $R^2$ = .01) in academic performance. These results indicate that students who adopt high quality approaches to studying and practice good time management skills perform better academically than those who adopt low qualities of these variables. The nonsignificant model and nonsignificant contribution of motivation in this case could imply that motivation, conceived of from self-determination view point, does not have substantial direct contribution to academic performance, because as discussed earlier, the relation between motivation and academic performance was negligible. Although the models for approach to studying and time management skill were significant, approach to studying was found to explain a larger proportion of the variance in academic performance than time management skill. This finding probably shows that if students give priority to the quality of study approach they adopt and spend time on studying using high quality approaches, they would be more productive in their academic performance. It also implies that having good time management skills (and even spending more time on studying) without adopting more effective study approaches would contribute less to academic performance. Regarding this, Entwistle et al. (1974) have contended that although the simplest indicator of study habits must be based on estimates of the number of hours worked by a student in a typical week, long hours of obsessive and ineffective work will rarely lead to academic success. Thus, it can be inferred from these results that approach to studying has the largest independent contribution to academic performance followed by time management skill and motivation.

However, the contribution of time management skill was greater than that of motivation indicating that, as will be discussed in subsequent paragraphs, motivation contributes more to academic performance with approach to studying and time management skill than alone.

Multiple regression analyses revealed statistically significant pair model for approach to studying and motivation. This model contributed more to academic performance than the other pair models. The addition of motivation on approach to studying substantially increased the proportion of the variance explained in academic performance. These results may indicate that although approach to studying is the most important contributor of academic performance, motivation also plays important role when combined with approach to studying. However, when approach to studying is statistically controlled (a multiple regression coefficient indicates the direction and relative contribution of an independent variable when all other independent variables in the model are held constant), the contribution of motivation is in the negative direction. This finding probably implies that contribution of motivation to academic performance would be positive if approach to studying plays the mediating role. This is because motivation is positively and significantly related to approach to studying, and approach to studying in turn is positively and significantly related to academic performance. These results may also imply that students would be academically more successful when they are motivated to adopt high quality approaches to their studying.

Stepwise regression analyses showed that the model for approach to studying, time management skill and motivation was able to explain 28% of proportion of the variance in academic performance with significant standardized coefficients. This result indicates that approach to studying, time management skill and motivation are important factors contributing to academic performance. It would also imply that if students are motivated to adopt high quality approaches to studying and to practice good time management skills, they would be academically more productive. However, in this model, while approach to studying and time management skill were found to have significant positive independent contributions to academic performance (because their beta weights were positive and significant), a unit increase in motivation was accompanied by a .20 decrease in CGPA. As discussed earlier, this result probably implies that motivation, conceived of from the self-determination theory

perspective and relative to approach to studying and time management skill, contributes significantly to academic performance in the negative direction. However, this does not mean that motivation is not necessary for academic performance. As can be observed from the zero-order correlations, motivation was found to have positive significant correlations with approach to studying and time management skill. Approach to studying and time management skill in turn were positively and significantly related to academic performance implying that motivation may have indirect positive contribution to academic performance when approach to studying and time management skill play the mediating role. These results may also indicate that even though motivation is a necessary condition for academic performance (because the addition of motivation on both approach to studying and time management skill significantly increased proportion of the explained variance), it may not be sufficient by itself since to be successful in their learning, students need to accomplish many things including adopting high quality approaches to studying and practicing effective time management skills.

Thus, it can be concluded that approach to studying, time management skill and motivation are indispensable to academic performance because they shared the largest proportion of the variance. However, while it had nonsignificant contribution to academic performance when considered alone, the contribution of motivation in the context of approach to studying and time management skill was found to be significant and in the negative direction. This implies that there is a need to harmonize the role that motivation plays in academic performance with that of approach to studying and time management skill in order to obtain better academic results.

Although, as far as the present researcher knows, there were no empirical studies dealing simultaneously with the relations among approach to studying, time management skill, motivation and academic performance, results seem to be consistent with investigations that consider some of these variables and academic performance at a time. Deep and strategic approaches, either alone or in combination, were found to predict high academic achievement while low achievement was predicted by a surface approach to learning (Burton et al., 2009). Besides, a significant relation between college students' grade point averages and the overall score of time management behavior scale (TMBS) was reported indicating that good time

management skills have positive effects on academic performance (Macan et al., 1990). Also effective time management skills were found to account for 36% of the variance in grade point average among college students (Britton & Tesser, 1991) and 4% of the variance in academic performance (Truman & Hartley, 1995). Likewise, it was disclosed that motivation accounted for 13% of the variance in the overall grade point average, and that two subscales of extrinsic motivation (introjected and identified regulations) had contributed to academic performance in the negative direction (Areepattamannil, 2006).

Stepwise regression analyses also indicated that time management skill had more significant contribution to approach to studying (Adjusted $R^2 = .51$) than motivation (Adjusted $R^2 = .19$). Similarly, the model for motivation was able to explain 22% of the variance in time management skill with significant beta coefficient. This implies that students are more likely to adopt effective time management skills when they are motivated. The pair model regression analyses for time management skill and motivation was also able to explain the largest proportion of the variance (Adjusted $R^2 = .52$) in approach to studying. The addition of motivation on time management skill substantially increased the proportion of the variance accounted for in approach to studying. These findings imply that although time management skill is more important contributor of approach to studying than motivation, better results are obtained when they are combined. The results would also imply that time management skill and motivation are the important variables that contribute to approach to studying leaving only about 48% of its variance unaccounted for. Altogether, the findings indicate that although motivation is a necessary condition (because the addition of motivation on time management skill significantly increased proportion of the explained variance), without practicing effective time management skills, students may be less productive in adopting high quality approaches to studying. In general, from the relations of time management skill, motivation and approach to studying, it can be inferred that motivation and time management skill are group of variables that explain a considerable variance in approach to studying and so does motivation in time management skill.

The above findings are consistent with the few studies and suggestions that address relations of approach to studying, time management skill and motivation. It was indicated that

students who adopt the strategic approach achieve the highest grades through effective time management and organized study methods and that students' study methods depend on their motivation to learn (Siddiqui, 2006).

### 5.3 Gender Difference in Approach to Studying, Time Management Skill and Motivation

This section discusses results of gender difference in approach to studying, time management skill and motivation. The significant gender difference found in the overall score of approach to studying indicated that male students obtained higher scores than their female counterparts. This finding probably implies that male students adopt high quality approach to studying than female students. Explanations that support this finding may come from the analyses of gender difference in the components of approach to studying in which male students reported significantly higher scores in the high quality approaches (Deep and Strategic) than female students and female students obtained significantly higher scores in the low quality approach to studying (Surface) than male students. This may indicate that female students tend to lag behind male students in adopting high quality approaches to studying.

Although further studies are needed to confirm consistency of the above results in our country's context, the present study tend to show the direction of gender difference in approach to studying, despite few previous studies (Richardson, 1993; Byrne et al., 1999) that failed to find consistent evidence of the significant difference between male and female students' approaches to studying in higher education. These inconsistent results, in line with Richardson's suggestions, can be attributed to methodological drawbacks. First, several of the studies were vulnerable to sampling bias because of the use of postal surveys which produced an unsatisfactory response rate. Second, in some cases, gender differences were confounded with differences among academic disciplines by virtue of unequal representation of male and female students in different disciplines. In the present study, however, it was attempted to overcome these limitations by obtaining satisfactory response rate and making number of male and female students selected from each department proportional to their total number in the department. Likewise, similar to the present finding Kelly, Fujita, Itoh and Otsuka (1990) reported significant gender difference in approach to studying with female

students scoring higher than male students on the surface approach and male students scoring higher than female students on the deep approach.

The present study also found significant gender difference in favor of male students in time management skill. This result could be supported by the finding that male students obtained significantly higher scores on making and following a schedule, being organized in using time and perceived use of time to be purposive than female students whereas female students reported significantly higher scores on procrastination than male students. Together, the findings imply that male students tend to be effective time managers than female students.

The above findings are inconsistent with the few studies that address gender difference in time management skill among college students (Macan et al., 1990; Misra & McKean, 2000; Truman & Hartley, 1995) all of which were conducted in the Western World (USA and Europe). Although it is difficult to ascertain why these inconsistencies were found depending only on the present data, one possible explanation could be differences in the cultural and family backgrounds of the participants in the present study and those conducted in the western culture. While participants in the western studies mainly came from more educated families and a culture in which time is the most important issue for most people (Boniwell, 2005), respondents in the present study mainly came from uneducated families. Considering the fact that educated families rather than uneducated ones help their children to develop effective time management skills when they study; participants in the present study, especially female students, seem to be disadvantaged since majority of them came from cultures and families that are reluctant in educating females and that favor males' education than that of females.

Another possible explanation for gender difference in time management skill that was found in favor of male students could lie in the difference of the measuring instruments used. While the western studies under consideration found gender difference in time management skill in favor of female students by using the TMBS (Macan et al., 1990), in the present study an instrument adapted from the Hawaii Time Management Scale (Nelson, 2003) was employed. Although both instruments had acceptable psychometric qualities, the one used in the present study was adapted from a more content valid scale. Likewise, while procrastination was

addressed using a single item in TMBS, in the Hawaii Time Management Scale, and therefore in the present study, procrastination was considered as a subscale composed of different items. That is, little attention was given to procrastination as a component of time management skill in the western studies. However, in the present study procrastination was considered as one important subscale and low quality component of time management skill. Thus, obtaining different results with different measuring instruments may not be so surprising.

However, although using a different instrument and at a different educational level (high school) than the present study (university level), in our country's context, Tiruwork (2004) found that male students tend to procrastinate more than female students. One possible explanation for inconsistency of this finding and gender difference in procrastination found in the present study could be cultural homogeneity of the participants. Tiruwork's study concentrated on only one high school with a relatively homogeneous cultural group, while the present study considered university students who came from all regions of Ethiopia and therefore culturally more heterogeneous. The cultures from which students came may differ in the extent to which they help male and female children to develop and practice effective time management skills.

Other possible explanation may be that in our culture, at high school, female students tend to be under their parents' control and spend most of their time doing household tasks whereas male students are relatively free. Thus, male students in the Tiruwork's study probably felt little control from parents and engaged in other activities (e.g., play, socialization) and found to be procrastinating. But female students, because they spend more time doing household tasks and are under the parents' control, may effectively use the few time they have for studying, and therefore, tended not to procrastinate. Tiruwork herself explained that one possible reason for which male students were found procrastinating than female students might be the freedom that male students are given from the family. She further indicated that in the Ethiopian culture, males have more right to go and enjoy outside the home than females. In a university, however, the trend may change because both male and female students are relatively free from the control of their parents. Male students may start concentrating more on studying to be academically competent while female students may

focus on socialization and recreational activities by postponing doing academic activities at the time they have to be done. This is probably why in the post educational world (colleges and universities), male students move a head of female students in virtually every area (Gilligan, 1982; Landrine, 1992 & cited in Amare, 2001). On the other hand, unsatisfactory response rate could cast doubt on gender difference in procrastination found in Tiruwork's study because, although she reported that data of 76 (13.22%) participants were rejected due to the incompleteness of responses on procrastination scale, neither randomness nor gender of the rejected cases was reported.

Regarding gender difference in motivation, although not significant, the mean difference in the overall score was in favor of males. However, analyses of gender differences on the components of motivation revealed somewhat logically contradicting results. This is because female students tended to be simultaneously more amotivated and intrinsically motivated on the same activity (reasoning out why they came to university) than male students. Nonetheless, by simultaneously comparing male and female students' scores on amotivation and intrinsic motivation, it was found out that female students tended to be predominantly more amotivated than male students. But no significant gender difference in intrinsic motivation was found with these additional analyses. Thus, although further investigations are required to reconcile these contradicting findings, results from additional analyses coupled with the gender difference in favor of male students found in the overall score of motivation, probably show that male students tend to be more motivated than female students.

The above results are inconsistent with the existing research literature which generally indicated that female students, more than their male counterparts, tend to display self-determined motivational profiles-extrinsic and intrinsic motivation-than nonself-determined motivational profile-amotivation (Ratelle, Gay, Vallerand et al., 2007 & Vallerand et al., 1992) which were conducted in the western culture (Canada). Although it is difficult to ascertain reasons for these inconsistencies using only the present data, one possible explanation could be the cultural contexts in which the present study and the western studies were conducted. The western culture is mostly composed of educated population which emphasize parental involvement and support of the child's (whether female or male)

autonomy behavior such as encouraging independent thinking, acknowledging the child's perspectives, and providing opportunities to make choices (Ratelle, Larose, Guay, & Senecal, 2005). However, participants in the present study came mostly from uneducated families and cultures that relatively appear not to support autonomy and exercise more control. More than male students, female students seem to experience this lack of autonomy because of the attitude of the society towards females and their education. Lack of autonomy support has a detrimental effect on motivation (Ryan & Deci, 2000). Thus, female students in the present study might develop a self-concept that they cannot compete with male students and therefore tended to be more amotivated.

### 5.4 Difference in Academic Performance as a Function of Gender and Approach to Studying, Gender and Time Management Skill, and Gender and Motivation.

The central purpose of this section is to discuss difference in academic performance with respect to gender and predominance of scores in the components of approach to studying, time management skill and motivation. Number of students predominantly adopting surface approach to studying was found to exceed number of students predominantly adopting the deep and strategic approaches by about one-third. However, interestingly, CGPAs showed a decreasing trend in which deep and strategic predominant students received higher points than those who tended to adopt surface approach to studying. Moreover, with closer examination using Scheffe's post hoc comparison procedure, it was found out that regardless of gender, students who predominantly adopted the deep approach to studying had significantly higher CGPAs than those who tended to adopt the surface approach to studying. This result indicates that there is a significant difference in academic performance with respect to approach to studying. Students who tend to adopt deep approach academically surpass those who tend to adopted surface approach probably due to the intention they have for understanding, engaging with and valuing the courses they learn. In contrast, surface predominant students memorize information needed for assessments and would be at a risk of obtaining lower grades either if the memorized information is forgotten in examination rooms or if exam items are not correctly answered with sole memorization. Nonetheless, the nonsignificant gender difference in academic performance for predominant students in different components of approach to studying indicates that whether male or female, if a

student adopts high quality approaches to studying, his or her academic performance would be better than if he or she adopts low quality approaches.

The above results are consistent with the research literature. Most of the students who consistently adopted deep approach to studying passed all their examinations, whereas less than a quarter of those using surface approach were fully successful (Svensson, 1977). Also successful academic performance was related to using a deep approach to studying (Watkins & Hattie, 1981; Goh, 2005) while the surface learning approach has consistently been found to negatively correlate with academic success (Burton et al., 2009).

On the other hand, interviewees indicated that they tend to adopt the strategic approach to studying; although contextual dependence of deep approach was also reported. They pointed out the strategies of asking seniors such materials as lecture notes and handouts; and searching for information regarding examinations all of which were characteristics of the strategic students (Lublin, 2003). The contextual dependence of deep approach as reported by a student who had interest to read deeply but the assessment system tended not to demand it was also found to be consistent with the findings of Marton and Saljo (1976b). Marton and Saljo disclosed that even if many students are capable of using deep or surface strategies, if existing assessment system requires students mainly to recall factual information, deep level understanding will be in jeopardy. It was also pointed out that unless students realize that deep approach to learning is required, deep level processing is unlikely to take place (Entwistle, 1993).

In the same manner, from participants who showed predominance in time management skill, number of students who tended to procrastinate was found to be greater than twice the number of students predominant in the high quality components (Making and Following a Schedule, Being Organized in Using Time and Perceived use of Time to be Purposive). High quality time management skills predominant students received higher CGPAs than those who were predominantly procrastinating. Scheffe's post hoc comparison procedure confirmed that generally the difference in academic performance of students predominant in high and low quality components of time management skill were statistically significant. These findings imply that making and following schedules, prioritizing activities to be done and being

organized in using time makes a significant difference in academic performance with students predominantly putting off academic tasks receiving lower grades. However, no significant gender difference in academic performance was observed for predominant students in different components of time management skill. This finding probably indicates that whether male or female, if a student practices good time management skills, his or her academic performance would be better than if he or she practices poor time management skills.

Data obtained through interview indicated that the students varied in their time management skills; from managing time well to procrastination. The present study has also indicated that majority of the students (70%) who showed predominance in time management skill did not do academic activities at the time they had to do. Even though reasons for this high rate of procrastination are many and varied, one possible explanation may be the emphasis that students give for their learning. Unlike in high school where they are relatively under the control of parents and teachers, in a university, students are free and there may be other activities (e.g., socialization, recreation) which may distract students and could affect their studying, therefore their performance, if not balanced. The other possible explanation could be that burden of studying, assignments and other academic activities tend to be towards the end of a semester rather than balanced throughout it. This may create in the minds of many students that even if a semester has begun, the time of actual studying has not yet come.

The above results are consistent with existing suggestions and findings in the research literature. The finding that many students tended to procrastinate agrees with Mcwhorter's (1996) suggestion that time management is a skill few people have but one that most people need. Also this author pointed out that effective time management can make the difference between being a mediocre student and an excellent one. Likewise, effective time management skills have been positively associated with academic performance (Macan et al., 1990; De Volder & Lens, 1982; Zulauf & Gortner, 1999). In addition, poor time management skills such as procrastination has been negatively associated with performance (Elmer, 2000; Akinsola et al., 2007; Brownlow & Reasinger, 2000).

With respect to respondents who showed predominance in motivation, number of students was found to increase as we move from the most self-determined motivational orientation (Intrinsic Motivation) to the nonself-determined form of motivation (Amotivation). But CGPA showed a decreasing trend in the same direction. Using Scheffe's post hoc comparison procedure, significant difference in academic performance was found between predominantly intrinsically motivated and amotivated students. This result implies that generally there is significant difference in academic performance with respect to motivation. The findings further indicate that self-determined forms of motivation (Intrinsic and Extrinsic Motivation) contribute more to academic performance than nonself-determined motivational orientation (Amotivation). However, as discussed earlier, no significant relations were found between self-determined forms of motivation and academic performance. That is, when compared with one another, self-determined types of motivation seem to be associated with better performance than nonself-determined one. But as self-determination tended to increase within each phase of self-determined forms of motivation (Intrinsic and Extrinsic Motivation), academic performance tended to decrease and vise versa. This shows that there is a gap between self-determined motivational orientations and academic performance. This is probably because little or none of the students' self-determined motivational energy was invested on academic activities. Yet, as in approach to studying and time management skill, no significant gender difference was found in academic performance among students who showed predominance in different phases of motivation. This finding implies that regardless of gender, students who tend to be motivated tend to perform well than those who tend to be amotivated.

The findings that self-determined forms of motivation in contrast to nonself-determined one, tend to be accompanied by better academic performance is consistent with other studies. Intrinsic motivation has been linked to positive academic performance (Areepattamannil, 2006). Also Ryan and Deci (2000) pointed out that the more students are extrinsically regulated, the less they show interest, value and effort towards achievement and the more they disown responsibility for negative outcomes, blaming others such as the teacher which eventually led to poor academic performance. In addition, it was found that amotivated students perceive their behaviors as caused by forces out of their own control, ask themselves

why they go to college and eventually stop participating in academic activities (Vallerand et al., 1992). Furthermore, self-determined motivation has been associated with conceptual understanding, active information processing, better academic self-concept and better academic performance (Legault et al., 2006).

Generally, most of the present findings are not new. Relatively new findings might be the nonsignificant relationship found between motivation and CGPA, and the positive and significant association found between intrinsic motivation and surface approach to studying. Such types of relations are unexpected and not common in the research literature. Other inconsistent findings are gender difference in time management skill and components of motivation. Also the present study attempted to simultaneously find empirical relations among approach to studying, time management skill, motivation, their respective components and academic performance, though some of the relations are either empirically established or suggested in the literature. More interesting findings of the present study may be relationships found among high quality components of approach to studying, time management skill and academic performance which were all positive and significant. Other fascinating results are the relations of amotivation, procrastination and surface approach to studying with academic performance, which were all negative and significant.

The implications of the findings are many-fold. The present study has important implications for practice in that, first, students should consider whether they have high quality motivation and good time management skills in order to adopt high quality approach to studying. This is because, in the present research, motivation and time management skill accounted for a considerable variance in approach to studying when they are combined. The students also need to consider that their approach to studying, time management skill and motivation are of high quality and integrated in such a way that positive academic outcomes are obtained. However, caution is needed here because motivation was found to contribute to academic performance in the negative direction, probably because the students' self-determined motivational energy was not properly utilized to bring about positive academic outcomes. This energy may be channeled in a way that affects academic performance positively through good time management skills and high quality approach to studying. This suggestion appears to be feasible because the most self-determined form of motivation (intrinsic motivation)

tended to vary systematically with surface approach to studying and procrastination, indicating that probably the students' self-determined motivational energy was wasted in procrastination and less effective study approaches. Moreover, it was illustrated that motivation could contribute more to academic performance with approach to studying and time management skill than alone. Helping students exert their high quality motivation on learning through effective approaches to studying and time management skills calls for intervention from instructors, counselors and university administrators. If supportive and encouraging learning environments that positively contribute to students' motivation, time management skills and approach to studying are provided, their academic performance would improve. Thus, the more students, instructors, counselors and administrators work to integrate, enhance and maintain effective time management skills, high quality approaches to studying and motivation, the better the students' academic performance, quality and transferability of learning.

Second, the finding that majority of the students were predominant in surface approach to studying, procrastination and amotivation has also implication for practice. In addition to the problem of predominance in the surface approach to studying, data from interview indicated that the instructional context seemed to prohibit adoption of deep approach. Such instructional contexts should encourage, not discourage, the adoption of deep approach to studying. Because our objectives in education, at whatever level, should be to help students both to utilize their own learning approaches most effectively and transcend the limitations which those approaches carry with them, deep and strategic approaches to learning should be encouraged at the expense of the surface approach (Entwistle, 1993; Marsh, 2006). There are various strategies that should be incorporated into the instructional process, assessment, curriculum and administrative procedures to discourage surface and to encourage deep and strategic approaches (Marsh, 2006). One such strategy that appears to be applicable in our context is introducing learning and study skills components into the structure of a subject. Although integrating these skills into every course could help, providing a 'Study Skills Course' separately is another option and could help more. This course may be given to all students, especially at the freshman year coupled with such issues as 'Managing Stress' and 'Adapting to a New Environment'. One reason that justifies the need for this course could be

that because of the uses of surface approaches to learning in previous subjects (probably at high school), many students may not have the study skills required in higher education institutions at the beginning of their study. Therefore, the students may find the academic environment of the university stressful. Another technique for encouraging deep and strategic approach and discouraging the surface approach is to structure instructional contexts so that students realize that high quality approaches are demanded. This is because students tend to modify their approach to studying if the context (e.g. teaching, assessment) forces or requires it. When teachers structure classroom situations so that students perceive them differently, the students approach the situations differently (Schmeck, 1988 cited in Ropo, 1993). Assessment systems should also be planned carefully and demand deep level learning. This is because many teacher-made assessment items are usually criticized as simply requiring students to recall factual information at the expense of higher order thinking skills. Teachers are advised not to include items that encourage the regurgitation of factual answers because they are likely to shift students towards surface approach to studying (Marton & Saljo, 1976b).

The finding that relatively many students tended to predominantly procrastinate should also be given similar attention. The incidence rate of procrastination found in this study was high (70 %) among students who showed predominance in different components of time management skill. Most of these students (47%) were female implying that this area also requires immediate intervention. Students, instructors, counselors and administrators should find ways to at least minimize this rate. Neville (2007) forwards various techniques to fight against procrastination. One such technique for teachers is to make academic tasks attractive to the students and to show their importance to the students. This is because the inclination to do an academic task is proportional to the importance of the task to overall success and failure on a course. Also some academic procrastination is linked to avoidance of an unpleasant task. In addition, academic tasks need to be distributed throughout a semester rather than being accumulated near the end of a semester. For the students, such strategies as scheduling time, beginning projects or assignments early and creating effective places to do academic works are among ways of dealing with procrastination. It is suggested that for

perhaps a third of all student procrastinators, a to-be-done list, a daily schedule and a simple record keeping will do wonders (Tucker-Ladd, 2007).

The finding that many students were predominantly amotivated than those who were predominantly intrinsically or extrinsically motivated has also important implication for practice. The instructional context and teacher-student interaction should encourage students who lack motivation in doing academic activities. Also instructors, students themselves, counselors and administrative bodies need to ensure that those students who tend to be motivated exert their motivational energy on academic activities.

Third, it appears that female students need particular attention. This is because overall, they tended to lag behind their male counterparts in practicing effective time management skills and adopting high quality approaches to studying. Indeed, female students were found to be more amotivated, procrastinating and surface approach adopters. Thus, instructors, counselors and administrators need to help female students in order to at least minimize these problems. Possible ways of helping these students may be encouraging them (1) to have positive self-concepts about their academic competence, (2) to focus on doing academic activities at the time they have to be done and (3) to adopt high quality study approaches (Deep and Strategic) when they study. This does not mean, however, that male students do not need help, nor does it mean all female students are in these problems and should be helped. As indicated in this study, regardless of gender, those who tended to have high quality motivation, practice good time management skills and adopt high quality approaches to studying performed better academically. This implies that if they have the necessary motive, good time management skills and they adopt effective approaches to studying, female students can perform as male students or better. Thus, the implication that could be drawn from the present study regarding gender is that all students who tended to be amotivated, procrastinating and surface approach adopters need special help from instructors, counselors, and administrators. Nonetheless, because female students were found to be relatively more vulnerable to these problems which probably lead to poor academic performance, more attention should be given to them.

The present study has also practical implications for future research. Its relatively new and inconsistent findings may show future directions of research. First, the study of the relationship between motivation and CGPA requires more careful and systematic future research. This could be done by identifying students who exhibit different motivational orientations and assessing their performance. In this study, it appears that motivation contributes positively to academic performance if approach to studying and time management skill are used as mediating variables than when it is alone. Future research should explore the use of these and other mediating variables between motivation and academic performance, using such more rigorous models as path analysis and structural equation modeling.

Second, future research should substantiate consistency of gender difference in approach to studying, time management skill and motivation, as well as their respective components that were found in the present study. Especially, more attention should be given to the gender difference found in components of motivation (Amotivation and Intrinsic Motivation) which seemed to be logically contradictory, although additional analyses indicated some direction.

Third, further research need to be conducted in our context to confirm factor structures of the scales found in the present research. Particular attention should be given to components of approach to studying (Strategic) and time management skill (Being Organized in Using Time and Perceived Use of Time to be Purposive), because relative to others, their factor structures were not clear.

Finally, the correlational nature of the present study precludes making any causal statements. However, results do show differential trend in academic performance between students who adopt high and low quality components of approach to studying, time management skill and motivation, which are certainly worth pursuing. Thus, several questions can be proposed: Does motivation cause the students to adopt effective time management skills and high quality approaches to studying which in turn result in a better academic performance? Does amotivation lead to procrastination, and procrastination lead to adoption of surface approach to studying which in turn lead to poor academic performance? Perhaps, but these are questions to be answered by careful and systematic experimentation.

In interpreting the results of the present study, the following limitations should be considered. First, many of the findings of this study depend on self-report data. Thus, the items of the questionnaire are susceptible to response set such as social desirability in which the students could respond not on the basis of what they really feel, but on the basis of what they think are socially acceptable or desirable.

Second, although the participants that were excluded analyses by analyses due to missing data and outliers appeared to assume nearly random subsample of the original sample, their exclusion could have a detrimental influence on generalizability of the results. This is because in some analyses, a considerably large number of the respondents were excluded.

Third, although the general rule of thumb for internal consistency of scales is over .70 (Nunally, 1978 cited in Misra & McKean, 2000), in the main study of the present research, the internal consistency reliability of some subscales were lower than .70 but none below .50. Future researchers should explore the associations among variables in the present study with higher scale reliabilities. Nevertheless, attempts made to improve the psychometric qualities of the instruments could be observed from the comparison of pilot and main studies. The reliability coefficients of the full scales and most subscales of the instruments showed improvements in the main study relative to reliability coefficients found in the pilot study. Likewise, effort has been made to examine internal factor structures of the scales and their dimensionality through factor analysis. This analysis indicated some evidence of the construct validity and existence of different components of the scales.

Finally, lack of local research limited interpretations of the results since there were no frame of references against which to compare. Nonetheless, the present study is a good starting for future research.

# CHAPTER SIX

## SUMMARY AND CONCLUSIONS

The main objective of the present study was to examine interrelationships among approach to studying, time management skill, motivation and academic performance. Accordingly, the following questions were formulated as basic targets of the study:

1. Are there statistically significant relationships among students' approach to studying, time management skill, motivation and academic performance?
2. What proportion of the variance in academic performance do approach to studying, time management skill and motivation explain?
3. Do female and male students significantly differ in their approach to studying, time management skill and motivation?
4. Are there statistically significant differences in the students' academic performance with respect to gender and approach to studying, gender and time management skill, and gender and motivation?

In order to find answers for the above questions, the study was conducted on second year students of Mizan-Tepi University. There were 1049 (558 female and 491 male) second year students in the main campus of the university. From these, a total of 320 students, 100 (53 female and 47 male) for pilot and 220 (117 female and 103 male) for main study, were randomly selected based on faculties, departments, gender and achievement categories using stratified, simple and systematic random sampling methods.

Two instruments-questionnaire and semi-structured interview-were used to collect data. In addition, CGPAs of the students were collected from the registrar's office. The questionnaire consisted of three scales (Approaches and Study Skills Inventory for Students, Time Management Scale and Academic Motivation Scale), and demographic questions. The scales were adapted from previously developed instruments. Initially, the questionnaire was

administered to a pilot sample. Based on this, factor structures of the scales were examined, item analyses were carried out and the instruments were improved.

Correlational and regression analyses, ANOVA and independent samples t-test were employed to analyze quantitative data. The data obtained through the interview were analyzed qualitatively using the narration technique. The analyses revealed positive, low to moderate and significant relations among approach to studying, time management skill and academic performance. Likewise, mostly statistically significant associations were found among components of approach to studying, time management skill, motivation and academic performance. Time management skill and motivation accounted for respectively 51% and 19% of proportion of the variance in approach to studying. Together, they explained 52% of the variance. Also approach to studying independently accounted for the largest variance in academic performance (Adjusted $R^2$ = .25) followed by time management skill (Adjusted $R^2$ = .21) and motivation (Adjusted $R^2$ = .01). The pair model for approach to studying and motivation was able to explain larger proportion of the variance in academic performance (Adjusted $R^2$ = .27) than the other pair models. Similarly, approach to studying, time management skill and motivation accounted for the largest proportion of the variance in academic performance (Adjusted $R^2$ = .28) when they were combined; although contribution of motivation was in the negative direction. In addition, significant gender differences in favor of male students were found in approach to studying and time management skill. Number of students predominant in adopting the low quality component of approach to studying (Surface), time management skill (Procrastination) and motivation (Amotivation) was found to be considerably greater than those who were predominant in the high quality components (Deep and Strategic; Making and Following a Schedule, Being Organized in Using Time, Perceived Use of Time to be Purposive; Intrinsic and Extrinsic Motivation) of these variables. Furthermore, students who were predominantly adopting high quality approaches to studying, time management skills and motivation were found to have performed academically well than those who tended to adopt the low quality components of these variables. Moreover, analyses of the interview data indicated that the students adopted the strategic approach to studying more often, varied in their time management skills and had self-determined motivational orientation.

From the above findings, the following conclusions could be drawn:

1. Approach to studying, time management skill and motivation are closely related variables that have vital contributions to academic performance.

2. Students with intrinsic and extrinsic motivational orientations and good time management skills tend to adopt deep and strategic approaches to studying. But amotivated and procrastinating students tend to adopt surface approach to studying. Thus, it appears that adopting high quality approach to studying demands having high quality motivation and practicing good time management skills.

3. Compared to proportion of the variance in academic performance that were independently accounted for by approach to studying (Adjusted $R^2$ = .25) and time management skill (Adjusted $R^2$ = .21), proportion of the variance explained by motivation (Adjusted $R^2$ = .01) was by far low. However, addition of motivation on approach to studying substantially increased proportion of the variance in academic performance that was explained ($R^2$ Change = .02, $p<.02$). Likewise, compared to the variance explained in approach to studying by time management skill (Adjusted $R^2$ = .51), contribution of motivation was low (Adjusted $R^2$ = .19). But addition of motivation on time management skill substantially increased proportion of the variance that was explained in approach to studying ($R^2$ Change = .02, $p<.0$) implying that motivation contributes more to approach to studying with time management skill than alone. It appears, therefore, that approach to studying is more important in contributing to academic performance and that motivation tends to have more contribution with time management skill and approach to studying than alone.

4. Male students tend to be more effective than female students in adopting high quality approach to studying and time management skill.

5. Students' academic performance differs significantly with respect to approach to studying, time management skill and motivation. This is because, regardless of gender, students who were predominant in adopting deep and strategic approaches to studying, preparing schedules and following them, organized use of time, perceiving their time to be spent purposefully and who were predominantly intrinsically and extrinsically motivated appeared to be academically more successful than those who were predominantly adopting surface approach to studying, procrastinating and amotivated. Thus, it appears that better academic performance requires adopting high quality motivation, time management skill and approach to studying. Also it seems that it is the quality of these variables which the students use that accounts more for the difference in academic performance than their gender.

Finally, the present findings seem to have practical implications to the instructional process and future research. These implications were discussed in detail in chapter five. In short, the practical implications focused on the need to improve quality of the students' approach to studying, time management skill and motivation. Moreover, the need to help the students exert their self-determined motivational energy on academic activities was pointed out. Also it was recommended that further research should be carried out by using more rigorous methods, improving instruments used in the present study and including other relevant variables.

## REFERENCES


Aggarwal, J.C. (1998). *Essentials of educational psychology*. New Delhi: Vikas Publishing House PVT LTD.

Ahmad, S. (2007). *The relationship between time management and motivation.* Retrieved November 17, 2009 from http://ezinearticles.com/?The-Relationship-Between-Time-Management-and-Motivation&id=732473pdf

Airasian, P., & Gay, L. R., (2004). *Educational resea*rch (Chap. 4). Retrieved October 19, 2009 from http://prr.hec.gov.pk/chapters/2514/4.pdf

Akinsola, M.K., Tella, A, M., & Tella, A. (2007). Correlates of academic procrastination and mathematics achievement of university undergraduate students. *Eurasia Journal of Mathematics, Science and Technology Education, 3*, 363-370. Retrieved November 12, 2009 from www.ejmste.compdf

Amare Sahile (2001). Effects of Students' academic competence, self-determination and motivation on school performance in Tana Haiq Secondary School. *The Ethiopian Journal of Education, 21(1)*, 65-93.

Arambewela, R., Mulready, P., & Callaghan, B. (2007). *Differences in study approaches and the implications for student learning.* Retrieved October 21, 2009 from http://www.deakin.edu.au/dro/eserv/DU:30008113/arambewela-differencesinstudy-2007.pdf

Areepattamannil, S. (2006). *Academic achievement, academic self concept and academic motivation of immigrant adolescents in Greater Toronto Area (GTA) secondary schools*. Unpublished master's thesis, Queen's University, Canada. Retrieved November 18, 2009 from http://www.google.ca/url?sa=t&source=web&ct=res&cd=23&ved=OCA4QFjACOBQ&urc=https%3A%2F%2Fqspace.library.queens.pdf

Balkis, M., & Duru, E. (2009). Prevalence of academic procrastination behavior among pre-service teachers and its relationship with demographics and individual preferences. *Journal of Theory and Practice in Education, 5,* 18-32. Retrieved October 12, 2009 from http://eku.comu.edu.tr/index/5/1/mbalkis/eduru.pdf

Barkoukis, V., Tsorbatzoudis, H., Grouios, G., & Sideridis, G. (2009). The assessment of intrinsic and extrinsic motivation and amotivation: Validity and reliability of the Greek version of the academic motivation scale. *Assessment in Education: Principles, Policy and Practice, 15*, 39-55. Retrieved November 13, 2009 from http://dx.doi.org/10.1080/09695940701876128pdf

Beckwith, M. (1991). Approaches to learning, their context and relationship to assessment performance. *Higher Education, 22,* 17-30.

Biggs, J.B. (1987). *The learning process questionnaire manual: Student approaches to learning and studying.* Retrieved December 31, 2009 from ERIC database.

Biggs, J.B. (1994). Approaches to learning: Nature and measurement of. In T. Husen & T. N. Postlethwait (Eds.), *The international encyclopedia of education* (pp. 318-322). London: Pergamon.

Bond, M.J., & Feather, N.T. (1988). Some correlates of structure and purpose in the use of time. *Journal of Personality and Social Psychology, 55*, 321-329.

Boniwell, I. (2005). Beyond time management: How the latest research on time perspective and perceived time use can assist clients with time-related concerns. *International Journal of Evidence Based Coaching and Mentoring, 3*, 61-74. Retrieved December 31, 2009 from www.brookes.ac.uk/schools/education/ijebcm/ijebcm-docs/vol-3-2-boniwell.pdf

Brace N., Kemp, R., & Snelgar, R. (2006). *SPSS for psychologists: A guide to data analysis using SPSS for windows* (3rd ed.). Houndmills: Palgrave McMillan.

Britton, B.K., & Tesser, A. (1991). Effects of time management practices on college grades. *Journal of Educational Psychology, 83,* 405-410.

Brothen, T. P., & Wambach, C. (2001). Procrastination and personality, performance, and mood. *Personality and Individual Differences, 30*, 95-106.

Brownlow, S., & Reasinger, R. D. (2000). Putting off until tomorrow what is better done today: Academic procrastination as a function of motivation toward college work. *Journal of Social Behavior and Personality, 15,* 15-21. Retrieved October 12, 2009 from http://critical.tamucc.edu/~wiki/student/uploads/TonyArmadillo/procrastination.pdf

Burton, L. J., Taylor, A. J., Dowling, D. G., & Lawrence, J. (2009). Learning approaches, personality and concepts of knowledge of first-year students: Mature-age versus school leaver. *Studies in Learning, Evaluation, Innovation and Development, 6,* 65–81. Retrieved November 12, 2009 from http://sleid.cqu.edu

Byrne, M., Flood, B., & Willis, P. (1999). *Approaches to learning of Irish students studying accounting.* Retrieved December 11, 2009 from http://www.doras.dcu.ie/2222/1/DCUBS-Research-paper-series-36.pdf

Center for Good Governance. (2006). *Handbook on time management skills.* Retrieved November 12, 2009, from www.cgg.govpdf

Centre for Research on Learning and Instruction. (1997). *Scoring key for the approaches and study skills inventory for students (ASSIST).* Retrieved October 21, 2009, from http://www.tla.ed.ac.uk/ete/questionnaires/ASSIST.pdf

Christenson, C.A., Massey, D. R., & Isaacs, P.J. (1991). Cognitive strategies and study habits: An analysis of the measurement of tertiary students' learning. *The British Journal of Educational Psychology, 61,* 290-299.

Claessens, B.J., Eerde, W.V., Rutte, C.G., & Roe, R. A. (2005). *A review of the time management literature.* Retrieved December 13, 2009, from www.emeraldinsight.com/0048-3486.htm

Cohen, L., Manion, L., & Morrison, K. (2004). *Deep and superficial learning.* Retrieved October 21, 2009 from http://www.routledge-ny.com/textbooks/...pdf10DeepSuperficiallearning.pdf

Conti, R. (2001). Time files: Investigating the connection between intrinsic motivation and the experience of time. *Journal of Personality, 69,* 1-26. Retrieved October 12, 2009 from http://edtech.cebs.wku.edu/~rmiller/wpi.pdf

DeVolder, M.L., & Lens, W. (1982). Academic achievement and future time perspective as a cognitive motivational concept. *Journal of Personality and Social Psychology, 42,* 566-571.

Dochy, F. (2005). *Learning lasting for life and assessment: How far did we progress?* Retrieved October 5, 2009 from http://www.earli.org/resources/Presidential%20Address%20EARLI2005.pdf

Elmer, D. (2000). *Wasted time or informed delay? Academic procrastination, learning style, and self-talk.* Retrieved December 12, 2009 from http://www2.edutech.nodak.edu/ndsta/elmer.htm

Entwistle, N.J. (1992). Approaches to learning. In H. Byrne, et al. (Eds.), *Encyclopedia of learning and memory* (pp. 63-64). New York: Macmillan Publishing Company.

Entwistle, N. (1993). *Styles of learning and teaching: An integrated outcome of educational psychology for students, teachers and lecturers.* London: David Fulton Publishers Ltd.

Entwistle, N.J. (1994). Adult study strategies. In T. Husen & T. N. Postlethwait (Eds.), *The international encyclopedia of education* (pp. 184-194). London: Pergamon.

Entwistle, N.J., Thomson, J., & Wilson, J.D. (1974). Motivation and study habits. *Higher Education, 3,* 379-396.

Eson, M. E. (1972). *Psychological foundations of education* (2nd ed.). New York: Holt Rinehart and Winston, Inc.

Faye, C., & Sharpe, D. (2008). Academic motivation in university: The role of basic psychological needs and identity formation. *Canadian Journal of Behavioral Science, 40,* 189-199. Retrieved November 18, 2009 from http://www.psychnet.apa.org/index.cfm?fa=fulltext.journal&jcode4pdf

Fransson, A. (1977). On qualitative differences in learning: IV. Effects of intrinsic motivation and extrinsic test anxiety on process and outcome. *The British Journal of Educational Psychology, 47,* 244-257.

Gadzella, B.M., Ginther, D.W., & Williamson, J.D. (1987). Study skills, learning process and academic achievement. *Psychological Reports, 61,* 167-172.

Gardner, J.N., & Jewler, A.J. (1997). *Your college experience: Strategies for success* (3rd ed.). New York: Wadsworth Publishing Company.

Goh, P.C. (2005). *Perceptions of learning environments, learning approaches and learning outcomes: Study of private higher education students in Malaysia from twinning programmers*. Unpublished doctoral dissertation, University of Adelaide, Australia. Retrieved November 12, 2009 from http://www.digtal.library.adelaid.edu.au/dspace/handle/2440/37753

Grasha, A. F. (1995). *Practical applications of psychology* (4th ed.). New York: HarperCollins College Publishers.

Higher Education Relevance and Quality Agency. (2006). *Strategic plan (2006-2009)*. Addis Ababa, Ethiopia.

Houston, J. B. (1986). *Fundamentals of learning and memory* (3rd ed.). New York: Harcourt Brace Jovanovich, Inc.

Kalish, R.A. (1979). *Guide to effective study*. California: Wadsworth, Inc.

Kelly, M., Fujita, K., Itoh, H., & Otsuka, Y. (1990). Approaches to study in Japanese Higher Education Students. *Bulletin of the National Institute of Multimedia Education, 3*, 203-254. Retrieved November 22, 2009 from http://nels.nii.ac.jp/els/110007046421.pdf?id=ART0008973702&type=pdf&lang=en&host=cinii&order/no=&ppv/type=0&lang/sw=&no=1256811226&cp

Kline, P. (1994). *An easy guide to factor analysis.* London: Routledge, Inc.

Legault, L., Green-Demers, I., & Pelletier, L. (2006). Why do high school students lack motivation in the classroom? Toward an understanding of academic amotivation and the role of social support. *Journal of Educational Psychology, 98*, 567-582.

Lublin, J. (2003). *Deep, surface and strategic approaches to learning: Good practice in teaching and learning.* Retrieved November 13, 2009 from http://www.ucd.ie/.../deep%20surface&strategic20%learningpdf

Macan, T.H. (1994). Time management: test of a process model. *Journal of Applied Psychology, 79,* 381-391.

Macan, T.H., Shahani, C., Dipboye, R.L., & Philips, A.P. (1990). College students' time management: Correlations with academic performance and stress. *Journal of Educational Psychology, 82,*760-768.

Marton, F., & Saljo, R. (1976a). On qualitative differences in learning-I: Outcome and process. *The British Journal of Educational Psychology, 46,* 4-11.

Marton, F., & Saljo, R. (1976b). On qualitative differences in learning-I: Outcomes as the function of the task. *The British Journal of Educational Psychology, 46,* 115-127.

Marsh, D. (2006). *Deep and surface approaches to learning: An introduction.* Retrieved November 12, 2009 from http://www.csap.bham.ac.uk/resources/guides/student/learning.htm

Mcwhorter, K. T. (1996). *Study and critical thinking skills in college* (3rd ed.). New York: HarperCollinsCollegePublishers.

Messick, S. (1984).The psychology of educational measurement. *Journal of Educational Measurement, 21,* 215-237.

Misra, R., & McKean, M. (2000). College students' academic stress and its relation to their anxiety, time management, and leisure satisfaction. *American Journal of Health Studies, 16,* 41-51. Retrieved December 31, 2009 from http://www.findarticles.com/p/articles/mi/moCTG/is/1/16/ai.../pg/10/

Morford, Z. H. (2008). *Procrastination and goal-setting behaviors in the college population: An exploratory study.* Unpublished master's thesis, Georgia Institute of Technology, USA. Retrieved October 21, 2009 from http://www.smartech.gatech.edu/bitstream/1853/21829/1/FinalThesis.pdf

Morgan, C.T., & Deese, J. (1957). *How to study*. New York: McGraw-Hill Book Company, Inc.

Murphy, D., & MacGrath, D. (2006). *Surface to deep: An assessment intervention to influence the students' learning approach.* Retrieved October 13, 2009 from http://www.afaanz.org/research/AFAANZ%2006139.pdf

Nelson, K. (2003). *The Hawaii time management scale and health related behaviors.* Unpublished doctoral dissertation, University of Hawaii, Manoa. Retrieved October 21, 2009 from http://www.scolarspace.manon.hawaii.edu/bitsream/10125/.../uhm_phd_4356_r.pdf

Nettles, M. T., & Nettles, A.L. (1997). *Equity and excellence in educational testing and assessment.* New York: Kluwer Academic Publishers.

Neville, C. (2007). *Procrastination: What it is, why we do it, what we can do about it.* Retrieved December 13, 2009 from http://www.brad.ac.uk/acad/management/external/els/pdf/procrastination.pdf

Nilsen, H. (2007). Motivation and learning strategies of information systems students: From theory to practice. *Proceedings of the Computer Science and Information Technology Education Conference,* Agder University College, Norway. Retrieved October 12, 2009 from http://csited.org/2007/21NilsCSITEd.pdf

Nist, S.K., & Simpson, M. (2002). *College studying: Reading online.* Retrieved October 21, 2009 from http://www.readingonline.org/articles/art_index.asp?HREF=handbook/nist/index.html

Pedhazur, E.J., & Sckmelkin, L. P. (1991). *Measurement, design and analysis: An integrated approach.* New Jersey: Lawrence Erlbaum Associates Inc., Publishers.

Pintrich, P. R., & Schunk, D. H. (2002). *Motivation in education: Theory, research and applications* (2nd ed.). New Jersey: Pearson Education, Inc.

Porter, L. (2009). *Motivating children.* Retrieved October 12, 2009 from www.louiseporter.com.au

Prosser, M., & Triggwell, K. (1990). *Student evaluations of teaching courses: Student study strategies as a criterion of validity. Higher Education, 20,* 135-142.

Ramsden, P., & Entwistle, N. J. (1981). Effects of academic departments on students' approaches to studying. *The British Journal of Educational Psychology, 51,* 368-383.

Ratelle, C.F., Guay, F., Larose, S., & Senecal, C. (2004). Family correlates of trajectories of academic motivation during a school transition: A semi parametric group-based approach. *Journal of Educational Psychology, 96,* 743–754.

Ratelle, C.F., Guay, F., Vallerand, R. J., Larose, S., & Senecal, C. (2007). Autonomous, controlled, and amotivated types of academic motivation: A person-oriented analysis. *Journal of Educational Psychology, 99,* 734–746.

Ratelle, C.F., Larose, S., Guay, F., & Senecal, C. (2005). Perceptions of parental involvement and support as predictors of college students' persistence in a science curriculum. *Journal of Family Psychology, 19,* 286–293. Retrieved October 12, 2009 from http://Psycnet.apa.org/journals/fam/19/2/286/.pdf

Richardson, J. E. (1993). Gender differences in responses to the approaches to studying inventory. *Studies in Higher Education, 18,* 3-13. Retrieved December 31, 2009 from http://dx.doi.org/10.1080/03075079312331382418pdf

Robinson, F.P. (1961). *Effective study.* New York: Harper and Brothers, Publishers.

Ropo, E. (1993). Studying technology: An investigation of approaches to studying and perception of teaching in a Finnish University of Technology. *Higher Education, 25,* 111-132.

Rutkowski, K., & Domino, G. (1975). Interrelationships of study skills and personality variables in college students. *Journal of Educational Psychology, 67,* 784-789.

Ryan, R. M., & Deci, E.L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development and well-being. *American Psychologist, 55,* 68-78. Retrieved November 12, 2009 from http://www.psychnet.apa.org/index.cfm?fa=buy.optionTOBUY&id=2000-13324-007&CFID=4368052&CFTOKEN=46003771

Sansgiry, S.S., Bhosle, M., & Sail, K. (2006). Factors that affect academic performance among pharmacy students. *American Journal of Pharmaceutical Education, 70,* 1-9. Retrieved October 12, 2009 from http://www.aacp.org/

Senecal, C., Koestner, R., & Vallerand, R.J. (1995). Self regulation and academic procrastination. *The Journal of Social Psychology, 135*, 607-619. Retrieved December 31, 2009 from http://www.psych.rochester.edu/SDT/documents/1995/SenecalKoestnerVallerand/JSP.pdf

Sheldon, K.M., Abad, N., & Omoile, J. (2009). Testing self-determination theory via Nigerian and Indian adolescents. *International Journal of Behavioral Development, 1*, 1-9. Retrieved November 12, 2009 from http://www.sagepublications.co

Shute, V. J. (1994). Learning process and learning outcomes. In T. Husen & T. N. Postlethwait (Eds.), *The international encyclopedia of education (*pp. 3315-3325). London: Pergamon.

Siddiqui, Z. S. (2006). *Study approaches of students in Pakistan: The revised two-factor study process questionnaire experience* (Occasional Report No. 1). Pakistan, National Academy of Higher Education. Retrieved October 21, 2009 from http://beta.hec.gov.pk/MediaPublication/HECPublication/Documents/684_Study-Approaches-of-Students-in-Pakistan.pdf

Smythe, J.A., Grove, H., & Robertson, V.T. (1998). *On the relationship between time management and time estimation.* Retrieved December 11, 2009 from http://eprints.worc.ac.uk/276/1/timexpBJP.pdf

Soric, I. (2009). Regulatory styles, causal attributions and academic achievement. *School Psychology International, 30,* 403-420. Retrieved November 12, 2009 from http://spi.sagepub.com/cgi/content/abstract/30/4/403

Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin, 133*, 65–94. Retrieved December 11, 2009 from http://my.ilstu.edu/~dfgrayb/Personal/Procrastination.pdf

Svensson, L. (1977). On qualitative differences in learning-III: Study skill and learning. *The British Journal of Educational Psychology, 47*, 233-243.

Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). Boston: Allyn and Bacon.

Taylor, M. H., & Bonsall, M. (1995). *Successful Study: A practical guide to get a good degree* (2nd ed.). London: The Hallamshire Press.

The Learning Centre. (2001). *Time management.* Retrieved November 23, 2009 from http://www.lc.unsw.edu.au

Tiruwork Tamiru (2004). *Academic procrastination and students' causal perceptions for their achievement at Awassa Tabor Senior Secondary School.* Unpublished master's thesis, Addis Ababa University, Ethiopia.

Truman, M., & Hartley, J. (1995). *Cross-cultural observations on Britton and Tesser's time management scale.* Retrieved November 17, 2009 from ERIC database.

Tucker-Ladd, C. (2007). *Psychological self-help: Procrastination.* Retrieved December 12, 2009 from http://www.psychologicalselfhelp.org/

Vallerand, R.J., Fortier, M.S., & Guay, F. (1997). Self-determination and persistence in a real-life setting: Toward a motivational model of high school dropout. *Journal of Personality and Social Psychology, 72,* 1161-1176.

Vallerand, R.J., Pelletier, L. G., Blais, M. R., Briere, N.M., Senecal, C., & Vallieres, E.F. (1992). The academic motivation scale: A measure of intrinsic, extrinsic and amotivation in education. *Educational and Psychological Measurement, 52,* 1003-1017.

Vallerand, R.J., Pelletier, L. G., Blais, M. R., Briere, N.M., Senecal, C., & Vallieres, E.F. (1993). On the assessment of intrinsic, extrinsic and amotivation in education: Evidence on the concurrent and construct validity of the academic motivation scale. *Educational and Psychological Measurement, 53,* 159-172.

VonEerde, W. (2003). A meta-analytically derived nomological network of procrastination. *Personality and Individual Differences, 35,* 1401-1418.

Watkins, D. (1986). Learning process and background characteristics as predictors of tertiary grades. *Educational and Psychological Measurement, 46,* 199-203.

Watkins, D., & Hattie, J. (1981). The learning processes of Australian University Students: Investigations of contextual and personological factors. *The British Journal of Educational Psychology, 51,* 384-393.

Weiner, B. (1985). *Human motivation.* New York: Springer-Verlag New York Inc.

Weiner, B. (1990). History of motivational research in education. *Journal of Educational Psychology, 82*, 616-622.

Young, B.R., & Fritzsche, B. A. (2002). Writing center users procrastinate less: The relationship between individual differences in procrastination, peer feedback, and student writing success. *The Writing Center Journal, 23,* 45-58. Retrieved December 12, 2009, from http://www.pp.bme.hu/so/2005/1/pdf/so2005/1/07.pdf

Zeegers, P. (2004). Student learning in higher education: A path analysis of academic achievement. *Higher Education Research and Development, 23,* 36-54. Retrieved October 21, 2009 from http://pdfserve.informaworld.com/168301/788608769/758480317.pdf

Zulauf, C. R., & Gortner, A.K. (1999, August). *Use of Time and Academic Performance of College Students: Does Studying Matter?* Paper Selected for Presentation at American Agricultural Economics Association Annual Meeting, Ohio State University. Retrieved December 13, 2009 from http://www.ccsenet.org/journal/index.php/elt/article/viewFile/472/481pdf

# APPENDICES

## APPENDIX A

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

INSTITUTE OF PSYCHOLOGY

### Questionnaire for Students

The purpose of this questionnaire is to gather data that are required to investigate the interrelationships among students' approach to studying, time management skill and motivation in order to forward suggestions as to how their study approaches and academic performance improve. Your responses to this questionnaire are used for only this purpose and nothing more. The responses will be kept confidential. Since the validity of this research depends on the accuracy of the responses you provide and the results will be used in scientific research, please be as honest as possible and give accurate responses of your own. There is no right or wrong answer. It is also very important that you answer *all* the questions: check you have!

*Thank You!*

**(PART I) DIRECTION:** The following statements describe how you go about your learning or studying. Please read each statement carefully and decide your level of agreement or disagreement with the statement truthfully so that your response will accurately represent your actual way of studying. After that, indicate your response by **putting a checkmark (✓) under the alternative** that accurately represents your level of agreement or disagreement with the statement. The **alternatives** are: *Strongly Disagree*, *Disagree*, *Undecided, Agree* and *Strongly Agree*. (Please try **not** to use *Undecided*; unless the statement does not really apply to you).

| NO. | Statement | Alternatives | | | | |
|---|---|---|---|---|---|---|
| | | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| 1 | I like lecturers who tell us exactly what to write in our notes. | | | | | |
| 2 | While studying, I try to connect the things I am reading with what I already know. | | | | | |
| 3 | I study hard to get a good grade even when I do not like the course. | | | | | |
| 4 | I think I am systematic and organized when studying for exams. | | | | | |
| 5 | While studying, I stop from time to time to think carefully about what I am trying to learn. | | | | | |
| 6 | Even when I have studied hard for a test, I fear that I may not be able to do well on it. | | | | | |
| 7 | While doing an assignment, I think about who is going to mark (or correct) the assignment and what he or she is likely to be looking for. | | | | | |
| 8 | I get interested in academic topics and feel I would like to continue studying them. | | | | | |
| 9 | I have a problem of giving meaning to things I have to remember. | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 10 | When I finish doing exams, I revise them carefully to check whether what I have done is meaningful. | | | | | |
| 11 | I like courses in which we are encouraged to read around the topic a lot for ourselves. | | | | | |
| 12 | I read very little outside what is actually required to pass tests or exams. | | | | | |
| 13 | I put a lot of effort (energy, time…etc) into studying because I have decided to do well. | | | | | |
| 14 | When I study, I try to relate ideas I come across to those in other topics or other courses. | | | | | |
| 15 | I find conditions for studying which allow me to do my work easily. | | | | | |
| 16 | I like exams or tests which focus only on materials provided in our lecture notes. | | | | | |
| 17 | When I read handouts or books, I try to find out for myself exactly what the writer means. | | | | | |
| 18 | I am good at following up the reading assignments suggested by lecturers. | | | | | |
| 19 | I focus on only memorizing much of what I have to learn. | | | | | |
| 20 | I look at evidences carefully and try to reach my own conclusion about what I study. | | | | | |
| 21 | I look carefully at the lecturer's comments on assignments or tests to see how to get higher marks next time. | | | | | |
| 22 | I spend much of my free time finding out more about interesting topics which have been discussed in different classes. | | | | | |
| 23 | I fear that I will not be able to do all of my academic activities properly and stay in this university. | | | | | |
| 24 | When I study, I like to find out the reason behind what I am reading. | | | | | |
| 25 | When I finish doing assignments, I check them carefully to see if they really fulfill the requirements. | | | | | |
| 26 | I focus on learning only those bits of information I have to know to pass. | | | | | |
| 27 | I like books which provide me more explanations than what is discussed in the class. | | | | | |
| 28 | I have a strong desire to get good grades in all courses. | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 29 | While studying, I think of how useful the topic that I am reading would be in real life. | | | | | |
| 30 | Before starting to work on an assignment, I think how best to do it. | | | | | |
| 31 | Usually, I am not really sure what is important in lectures; so I try to write all I can. | | | | | |
| 32 | While studying, I work hard until I understand for myself the meaning of what I have to learn. | | | | | |
| 33 | I find studying academic topics to be interesting. | | | | | |
| 34 | Because there are so many academic activities (e.g., studying, doing assignments… etc) that I am expected to do, I fear that I cannot do all of them effectively. | | | | | |
| 35 | I like courses in which the lecturer makes very clear about which books we have to read. | | | | | |
| 36 | I study only what is needed to pass in a course; I do not do anything more. | | | | | |
| 37 | I like examinations which allow me to show what I have thought about the course material for myself. | | | | | |
| 38 | When I study, I examine the details carefully to see how they fit with one another. | | | | | |
| 39 | In the class, I carefully observe what the lecturers consider to be important and focus on that. | | | | | |

***Please Check: Did You Respond to Each Statement?***

**(PART II) DIRECTION:** The following statements describe how you manage your time. Please read each statement carefully and decide your level of agreement or disagreement with the statement truthfully so that your response will accurately represent your actual way of managing time. After that, indicate your response by **putting a checkmark (✓) under the alternative** that accurately represents your level of agreement or disagreement with the statement. The **alternatives** are: *Strongly Disagree*, *Disagree*, *Undecided, Agree* and *Strongly Agree.* (Please try **not** to use *Undecided*; unless the statement does not really apply to you).

| NO. | Statement | Alternatives | | | | |
|---|---|---|---|---|---|---|
| | | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| 1 | I plan my day before I start it. | | | | | |
| 2 | I wait until examination days approach to start studying. | | | | | |
| 3 | I check my watch to stay on the activities I have planned. | | | | | |
| 4 | I start doing assignments long before their submission dates. | | | | | |
| 5 | My time passes away without using it appropriately. | | | | | |
| 6 | I do not do assignments until just before they are to be submitted. | | | | | |
| 7 | When the day starts, I do not know what I will do. | | | | | |
| 8 | I do other things, like watching television, discussing with friends...etc even if I know that I should study or do an assignment. | | | | | |
| 9 | I check to see whether I use my time effectively. | | | | | |
| 10 | I complete doing assignments before their submission dates. | | | | | |
| 11 | On an average class day, I spend more time with personal grooming (e.g., keeping clothes, hair… etc clean) than doing academic activities. | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 12 | I spend much of my time working on important academic tasks. | | | | | |
| 13 | I complete one activity before starting another. | | | | | |
| 14 | I stay for some days before starting the assignment I have to do. | | | | | |
| 15 | I usually do not know what I will do during the following week. | | | | | |
| 16 | I use my time wisely. | | | | | |
| 17 | Each morning, I spend too much time to decide which clothe to wear. | | | | | |
| 18 | When I finish one activity, I am not sure what to do next. | | | | | |
| 19 | I know what I want to achieve with my time. | | | | | |
| 20 | I wait until three or four weeks are left for final exams to start studying. | | | | | |
| 21 | I do not check whether I finish things on time. | | | | | |
| 22 | While studying, if I am disturbed, I try to refocus on the activity quickly. | | | | | |
| 23 | I see myself as someone who wastes time. | | | | | |
| 24 | I like to arrange activities I do in order of their importance. | | | | | |
| 25 | When I do assignments, I organize them first. | | | | | |
| 26 | To start studying, I wait until we are told that we have tests or exams. | | | | | |
| 27 | I plan activities to be done in each week to help me manage my time. | | | | | |
| 28 | While studying, I find an environment that minimizes interruptions. | | | | | |
| 29 | Usually, I forget where I put my handouts. | | | | | |
| 30 | I do not do assignments at the time I have to do. | | | | | |
| 31 | I can control my own time as I like. | | | | | |
| 32 | I know where to put my materials in order to find them quickly. | | | | | |
| 33 | Each morning, I know what I will do during the day. | | | | | |
| 34 | I do not like planning for what I study. | | | | | |
| 35 | When I study, I ask others not to disturb me. | | | | | |
| 36 | I start doing an assignment immediately after it is given. | | | | | |
| 37 | I use my time properly. | | | | | |

**(PART III) DIRECTION:** The following statements describe purposes or reasons for which you came to university. Please read each statement carefully and decide your level of agreement or disagreement with the statement truthfully so that your response will accurately represent your actual purpose or reason for coming to university. After that, indicate your response by **putting a checkmark (✓) under the alternative** that accurately represents your level of agreement or disagreement with the statement. The **alternatives** are*: Strongly Disagree*, *Disagree*, *Undecided, Agree* and *Strongly Agree.* (Please try **not** to use *Undecided*; unless the statement does not really apply to you).

| NO. | Why Did You Come to University? | Alternatives | | | | |
|---|---|---|---|---|---|---|
| | | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| 1 | Because I need a university degree in order to find a high paying job later on. | | | | | |
| 2 | For the pleasure that I get by increasing my knowledge about subjects which are interesting to me. | | | | | |
| 3 | Because I want to have good life later on. | | | | | |
| 4 | Honestly, I do not know why; I really think that I am wasting my time in university. | | | | | |
| 5 | Because university education helps me to enter the job market in a field that I like. | | | | | |
| 6 | Because of the fact that when I succeed in university, I consider myself to be an important person. | | | | | |
| 7 | Because I really like being a university student. | | | | | |
| 8 | Because this will help me make a better choice regarding my future job orientation. | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 9 | I once had good reasons for coming to university; however, now I do not see any. | | | | | |
| 10 | Because I get pleasure and satisfaction when learning new things. | | | | | |
| 11 | For the pleasure I get while improving myself in my studies. | | | | | |
| 12 | Because university allows me to continue to learn about many things that are interesting to me. | | | | | |
| 13 | I do not know why I came to university and frankly, I am not interested. | | | | | |
| 14 | For the high satisfaction that I get while reading about different interesting subjects. | | | | | |
| 15 | Because I believe that my university education will improve my ability as a worker. | | | | | |
| 16 | In order to get a high-status job later on. | | | | | |
| 17 | For the pleasure I get when I find out new things never seen before. | | | | | |
| 18 | I do not know; I could not understand what I am doing in university. | | | | | |
| 19 | For the pleasure that I get when I am taken by discussions with interesting lecturers. | | | | | |
| 20 | Because I want to show myself that I can succeed in my studies. | | | | | |
| 21 | Because university allows me to get personal satisfaction in my search for excellence in my studies. | | | | | |

***Please Check: Did You Respond to Each Statement?***

**PART IV: Demographic Questions**

1.1 Personal Information (Please Fill in)

1.1.1 Your Full Name: _____

1.1.2 Your Identification Number (I.D. No.): _____

1.1.3 Your Sex: _____

1.1.4 Your Age: _____

1.1.5 Your Department: _____

1.2 Questions related to your parents or guardians are given below. Please indicate the alternative that you think refers to your **parents** or **guardians** by **circling** its corresponding letter or **filling** in the given blank space.

1.2.1 What is your father's (or male guardian's) level of education?

A) No Education
B) Basic Education
C) Elementary School Education (grades 1-8)
D) High School Education (grades 9-12)
E) College Diploma
F) Professional Degree
G) Others (Please Specify): _____

_____

1.2.2 What is your mother's (or female guardian's) level of education?

A) No Education
B) Basic Education
C) Elementary School Education (grades 1-8)
D) High School Education (grades 9-12)
E) College Diploma
F) Professional Degree
G) Others (Please Specify): _____

_____

1.2.3 What is your parents'(or guardian's) job? Write on the Given Blank Spaces.

a) Your father's (or male guardian's) job: _____

b) Your mother's (or female guardian's) job: _____

*Please Check: Did you respond to all of the statements in this questionnaire?*

Thank you very much for spending time completing this questionnaire; it is much appreciated!

## Classification of Items in the Main Study*

| Full Scale or Subscale | Item Number |
|---|---|
| **Approaches and Study Skills Inventory for Students** | **1, 2, 3, 4,5, 6R,7, 8, 9R, 10, 11,12R, 13, 14, 15,16R, 17, 18, 19R, 20, 21, 22, 23R, 24, 25, 26R, 27, 28, 29, 30, 31R, 32, 33, 34R , 35, 36R, 37, 38, 39** |
| ***Deep Approach to Studying*** | |
| Seeking Meaning | 5,17, 32 |
| Relating Ideas | 2, 14, 29 |
| Use of Evidence | 20, 24, 38 |
| Interest in Ideas | 8, 22, 33 |
| Preference for Teaching which Encourages Understanding | 11, 27, 37 |
| ***Strategic Approach to Studying*** | |
| Organized Studying | 4, 15, 18 |
| Alertness to Assessment Demands | 7, 21, 39 |
| Achieving | 3, 13, 28 |
| Monitoring Effectiveness | 10, 25, 30 |
| ***Surface Approach to Studying*** | |
| Lack of Understanding | 9, 19, 31 |
| Syllabus Boundness | 12, 26, 36 |
| Fear of Failure | 6, 23, 34 |
| Preference for Teaching which Transmits Information | 1, 16, 35 |

| | |
|---|---|
| **Time Management Scale** | **1, 2R, 3, 4, 5R, 6R, 7R, 8R, 9, 10, 11R, 12, 13, 14R, 15R, 16, 17R, 18R, 19, 20R, 21R, 22, 23R, 24, 25, 26R, 27, 28, 29R, 30R, 31, 32, 33, 34R , 35, 36, 37** |
| Making and Following a Schedule | 1, 3, 7R, 9, 15R, 18R, 21R, 27, 33, 34R |
| Being Organized in Using Time | 11R, 13, 17R, 22, 24 , 25, 28, 29R, 32, 35 |
| Perceived Use of Time to be Purposive | 5R, 12, 16, 19, 23R, 31, 37 |
| Procrastination | 2, 4R, 6, 8, 10R, 14, 20, 26, 30, 36R |
| **Academic Motivation Scale** | **1, 2, 3, 4R, 5, 6, 7, 8, 9R, 10, 11, 12, 13R, 14, 15, 16, 17, 18R, 19, 20, 21** |
| ***Amotivation*** | 4, 9, 13, 18 |
| ***Extrinsic Motivation*** | |
| External Regulation | 1, 3, 16 |
| Introjected Regulation | 6, 20 |
| Identified Regulation | 5, 8, 15 |
| ***Intrinsic Motivation*** | |
| Intrinsic Motivation to Know | 2, 10, 12, 17 |
| Intrinsic Motivation to Experience Stimulation | 7, 14, 19 |
| Intrinsic Motivation to Accomplish Things | 11, 21 |

*Notes*. R indicates that the item was reversed while scoring

*On the Questionnaire, Approaches and Study Skills Inventory for Students, Time Management Scale and Academic Motivation Scale were administered respectively under PART I, PART II and PART III

# APPENDIX B

## Results of the Pilot Study

The main purpose of the pilot study was to test the psychometric qualities of the three scales (ASSIST, TMSC and AMS) that were used as major data gathering tools in the main study. An attempt was made to examine the dimensionality (factor structures) and the reliability of the scales (For reliability of the scales, see Table 2). Accordingly, method of factor analysis that was employed, number of components that were retained and summary of the results will be presented.

### 1. Method of Factor Analysis

A factor is a dimension or a construct which is a condensed statement of the relationship between a set of variables (Kline, 1994). Factor analysis is a family of analytic techniques that is designed to identify factors that underlie the relations among a set of observed variables (Pedhazur & Sckmelkin, 1991). In the present context, the observed variables are the indicators (or items) presumed to reflect the factor. Thus, factorability of the scales in the present study was checked using KMO (Kaiser-Meyer-Olkin measure of sampling Adequacy) and Bartlett's Test (Brace, Kemp & Snelgar, 2006). For four factor solution of ASSIST, both tests were good (KMO = .79, was good since it was close to one and Bartlett's Test was significant ($p<.001$). The four factors explained about 63% of the variance in the correlation matrix. For four factor solution of TMSC, KMO = .15 with significant Bartlett's Test ($p<.001$). The factors accounted for about 30% of the variance. Similarly, for the three factor solution of AMS, KMO = .63 with significant Bartlett's Test ($p<.001$). The three factors explained about 63% of the variance. For TMSC, KMO was poor and the proportion of the variance in the correlation matrix explained by four of its factors was relatively small. This was because TMSC had no minor subscales and unlike the other two scales, components were extracted directly from its items and therefore, factor analysis of minor subscales was not carried out. When components of the other two scales were extracted directly from their items guided by theoretical framework (i.e., number of components to be extracted depending on number of subscales under which the items were grouped and entered factor analysis), proportion of variance similar to that of TMSC was obtained. In other words, there were many factors beyond what were expected and that when

only major factors guided by the theory were extracted, because other factors were excluded, proportion of the variance explained by the extracted factors tended to be small. Number of the factors extracted was guided by theoretical framework because the main purposes of factor analysis in the present study were to improve the instruments and to examine their dimensionality; not to search for new factors. Since in most factor analysis of real data all items tend to have high loadings (loading is the correlation between an item and a factor) on the first unrotated factor (Pedhazur & Sckmelkin, 1991), it was necessary to rotate factors. Thus, the factors were extracted by means of maximum likelihood, and rotated with varimax method of rotation (Kline, 1994). Maximum likelihood factor analysis was preferred because each of the factors that it extracts explains as much variance as possible in the population correlation matrix, as estimated from the sample correlation matrix. Varimax, a type of orthogonal rotation, was used since it maximizes the variance accounted for by the factors.

Factors with an eigenvalue (an eigenvalue is an index that indicates the portion of the total variance in the correlation matrix that is explained by the factor) close to or greater than one and that match with theoretical framework regarding the variables were extracted. Previous research studies in this area (e. g., Byrne, et al., 1999) have used this criterion extensively. Factors were named based on the maximum loading in the absolute value and the dominant number of type of items sorted by the analysis. Using the above methods and theoretical framework, four major and 14 minor factors were retained for ASSIST, four major factors were retained for TMSC and three major and seven minor factors were retained for AMS.

**2. Summary**

The internal consistency reliability of the full scales and subscales seemed to be acceptable for research purposes except the surface approach, intrinsic motivation and subscales of TMSC which required revision and modification (see Table 2). Although the dimensionality of AMS was found to be in the expected direction, that of ASSIST and TMSC were not consistent with what was expected. For ASSIST, even though three major factors (deep, strategic and surface approaches to studying) were expected, the analysis resulted in four major factors in which the deep and strategic approaches were not clearly demarcated. Similarly, four major factors (Making and Following a Schedule, Being Organized in Using Time, Perceived Use of Time to

be Purposive and Procrastination) were expected for the TMSC. However, of the four factors extracted, the factor 'Perceived Use of Time to be Purposive' was not clearly identified. Most items had loadings of greater than .30 on the factors. Items with loadings less than .30 were discarded.

On the other hand, about five relatively long items that seemed to require deep thinking to understand were selected from each scale. Then, ten students were interviewed after the administration of the questionnaire. The purpose of this interview was to examine how the students understood the items. Much of the qualitative data obtained through the interview indicated that the students did not understand some of the items in the expected direction. These and other items that many students were frequently asking about their meanings during the administration of the questionnaire were either discarded or modified so as to be used in the main study.

Thus, for ASSIST, one item had a loading of less than .30. Item analysis showed that if 12 of its items were discarded (seven items were actually discarded and five were improved), reliability would increase. Eight items (two of whose elimination does not affect reliability and six items whose elimination decreases reliability by .04) were among those items that were being frequently asked and were not understood by the students in the required direction. Even though its rejection decreases reliability, one 'lack of purpose subscale' item was discarded because the subscale as a whole was eliminated. The elimination of the subscale was necessitated by the fact that: (1) all of its four items did not load on the required factor (i.e., surface approach), (2) item analysis showed that if three of its items were rejected, reliability would improve (3) staff members to whom the scales were given prior to pilot study for the analysis of the face validity and appropriateness for Ethiopian students suggested that the subscale be removed. All of these analyses resulted in the discarding of 17 items of ASSIST. The wordings of 18 items were improved and 21 were taken as they were. Thus, a total of 39 items were retained to be used in the main study.

For TMSC, 11 items had loadings of less than .30. Item analysis indicated that if 14 of its items were discarded (actually eight items were discarded because of loading and reliability, five items because of reliability and three items because of loading), its reliability would increase.

Three items (two of whose elimination does not affect reliability and one whose elimination decreases reliability by .02) were among those items that were being frequently asked and were not understood by the students in the required direction. These analyses led to the discarding of 19 items of TMSC. The wordings of eight items were improved and 29 were taken as they were. Thus, a total of 37 items were retained to be used in the main study.

Finally for AMS, two items had loadings of less than .30. Item analysis showed that if seven of its items were discarded, reliability would improve. Two items, whose elimination decrease reliability by .04, were among those items that were being frequently asked and were not understood by the students in the required direction. These analyses led to the discarding of seven AMS items (two items with loadings of less than .30, two items that were misunderstood by the students and three items whose rejection would improve reliability). Three of the seven items whose elimination would improve reliability were amotivation items. Separate item analysis for the subscale of amotivation indicated that if these items were discarded, reliability of the subscale would decreases substantially. As a result, they were improved and retained. Although the analysis showed that discarding one of the seven items would improve reliability, this item was better understood by the students. Hence, its wording was slightly improved and retained. Thus, the wordings of seven items were improved, 14 items were taken as they were and a total of 21 AMS items were retained to be used in the main study.

In general, out of the 140 items of the three scales that were presented for the pilot study, 43 (17+19+7) were discarded. The wordings of 33 (18+8+7) items were improved. Sixty four items (21+29+14) were taken as they were. Finally, a total of 97 (39+37+21) items were retained for the main study.

# APPENDIX C

## Results of Factor Analysis of the Scales in the Main Study

Using similar methods of factor analysis and theoretical frameworks described under Appendix B, three major (KMO = .83) and 13 minor (KMO = .75) factors were retained for ASSIST. Similarly, four major (KMO = .81) factors were retained for TMSC. Also three major (KMO =.77) and seven minor (KMO = .77) factors were retained for AMS. For all of these extractions, Bartlett's Test was significant ($p<.001$). The main difference of results of factor analysis in pilot and main studies was that in the main study, relatively clear factor structures of the scales were observed. This difference was probably due to improvements made on the items and increment of the sample size. The more participants tested, the more likely it is that any factors that do underlie the measured variables will be revealed (Brace, Kemp & Snelgar, 2006). Factor structures and loadings of items of ASSIST, TMSC, AMS, factor loadings of minor subscales of ASSIST and AMS are given below in Tables C1 to C5. In these tables, bolded loadings indicate items or minor subscales that are used to name the factors.

Table C1 Factor Structures and Loadings of Items of ASSIST

| **Rotated Factor Matrix[a]** | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Factor** | | | | | | | | | | | | |
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** |
| STOS4 | .627 | | | | | | | | | | | | |
| DPDTCT11 | **.589** | | | | | | | | | | | | |
| STAM28 | .534 | | | | | .349 | | | | | | | |
| STAAD21 | .486 | **.339** | | | | | | | | | | | |
| DRI14 | **.426** | | | .318 | | | | | | | | | |
| DSM5 | **.365** | | | | .339 | | | | | | | | |
| DRI2 | **.309** | | | | | | | | | | | | |
| DSM32 | **.304** | .302 | | | | .300 | | | | | | | |
| STAAD39 | | **.616** | | | | | | | | | | | |
| DII22 | | .578 | | | | | | | | | | | |
| DSM17 | | .421 | | .330 | | | | | | | | | |
| STAM13 | | .414 | | | | | | | | | | | |
| DPDTCT37 | | .384 | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DII33 | | | | | | | | | | | | | |
| SUAFF23 | | | **.614** | | | | | | | | | | |
| SUAFF6 | | | **.526** | | | | .320 | | | | | | |
| SUAFF34 | | | **.494** | | | | | | | | | | |
| SUALU9 | | | .478 | | | | | | | | | | |
| SUASB36 | | | | | | | | | | | | | |
| STME10 | | | | **.524** | | | | | | | | | |
| STME30 | | | | **.458** | | | | | | | | | |
| STME25 | .335 | | | **.444** | | | | | | | | | |
| DUE38 | | | | .434 | | | | | | | | | |
| SUALU31 | | | | | **.647** | | | | | | | | |
| SUASB12 | | | .312 | | .443 | | | | | | | | |
| DPDTCT27 | | | | | | **.578** | | | | | | | |
| STAAD7 | | | .309 | | | -.370 | | | | | | | |
| SUAPDTTCT35 | | | | | | .365 | | | | | | | |
| DUE24 | | | | | | .318 | | | | | .310 | | |
| STAM3 | | | | | | | | | | | | | |
| SUAPDTTCT16 | | | | | | | .695 | | | | | | |
| SUASB26 | | | | | .381 | | **.411** | | | | | | |
| SUAPDTTCT1 | | | | | | | | **.957** | | | | | |
| DUE20 | | | | | | | | | **.944** | | | | |
| STOS18 | | | | | | | | | | **.842** | | | |
| STOS15 | | | | | | | | | | | **.809** | | |
| DRI29 | | | | | | | | | | | | **.602** | |
| DII8 | .370 | | | | | | | | | | | | **.478** |
| SUALU19 | | | | | | | .308 | | | | | | .429 |
| % of the Explained Variance | *6.798* | *5.167* | *4.519* | *3.837* | *3.531* | *3.310* | *3.091* | *2.922* | *2.914* | *2.749* | *2.694* | *2.309* | *2.132* |
| Eigenvalue | *5.888* | *3.369* | *1.841* | *1.780* | *1.543* | *1.502* | *1.319* | *1.285* | *1.254* | *1.220* | *1.171* | *1.126* | *.989* |

Notes. - *Items that begin with 'D', 'ST' and 'SUA' were respectively items that measured Deep, Strategic and Surface Approaches to Studying*
- *Item Numbers are as classified in Appendix A*
- *[a]Rotation converged in 33 iterations*
- *Loadings less than .30 were omitted*
- *Factor 1 = Factor Related to Deep Approach*
- *Factor 2 = Alertness to Assessment Demands*
- *Factor 3 = Fear of Failure*

- *Factor 4 = Monitoring Effectiveness*
- *Factor 5 = Lack of Understanding*
- *Factor 6 = Preference for Teaching Which Encourages Understanding*
- *Factor 7 = Syllabus Boundness*
- *Factor 8 = Preference for Teaching Which Transmits Information*
- *Factor 9 = Use of Evidence*
- *Factor 10 = Organized Studying*
- *Factor 11 = Factor Related to Strategic Approach*
- *Factor 12 = Relating Ideas*
- *Factor 13 = Interest in Ideas*
- *Total Variance Explained by the 13 Factors = 45.97%*

Table C2 Factor Loadings of Minor Subscales of ASSIST

| ***Deep Approach to Studying*** | Factor 1 | Factor 2 | Factor 3 |
|---|---|---|---|
| Seeking Meaning | **.570** | | |
| Relating Ideas | **.570** | | |
| Use of Evidence | **.549** | | |
| Interest in Ideas | **.625** | | |
| Preference for Teaching which Encourages Understanding | **.627** | | |
| ***Strategic Approach to Studying*** | | | |
| Organized Studying | .533 | | |
| Alertness to Assessment Demands | .571 | | |
| Monitoring Effectiveness | | | **.949** |
| Achieving | .576 | | |
| ***Surface Approach to Studying*** | | | |
| Lack of understanding | | **.626** | |
| Syllabus boundness | | **.676** | |
| Fear of failure | | **.640** | |
| Preference for Teaching which Transmits Information | .392 | | |
| % of the Explained Variance | *23.072* | *10.656* | *8.635* |
| Eigenvalue | *3.939* | *1.958* | *.966* |

Notes. - *Loadings less than .30 were omitted*
- *Factor 1 = Deep Approach to Studying*
- *Factor 2 = Surface Approach to Studying*
- *Factor 3 = Strategic Approach to Studying*
- *Total Variance Explained by the Three Factors = 42.36%*

Table C3 Factor Structures and Loadings of Items of TMSC

| Rotated Factor Matrix[a] | | | | |
|---|---|---|---|---|
| | Factor | | | |
| | 1 | 2 | 3 | 4 |
| PRO26 | **.712** | | | -.320 |
| PRO2 | **.700** | | | |
| BOUT11 | .604 | | | |
| PRO14 | **.598** | | | |
| PUT5 | .584 | | | .378 |
| PRO6 | **.583** | | | |
| BOUT17 | .569 | | | |
| MFS7 | .531 | | | |
| BOUT29 | .522 | | | |
| PRO30 | **.502** | | | |
| PRO20 | **.454** | | | -.380 |
| MFS15 | .445 | | **.338** | |
| PUT23 | .419 | | | |
| MFS34 | .413 | | **.365** | |
| PRO8 | | | | |
| BOUT13 | | .532 | | |
| BOUT32 | | .531 | | |
| MFS1 | | .519 | | |
| PUT37 | | **.518** | | |
| MFS27 | | .502 | | |
| PRO24 | | .495 | | |
| PUT19 | | **.491** | | |
| PUT16 | | **.482** | | |
| MFS3 | | .460 | | |
| MFS33 | | .456 | | |
| PRO10 | | .456 | | |
| MFS9 | | .449 | | |
| MFS25 | | .378 | | |
| PUT12 | | **.354** | | |

| | | | | |
|---|---|---|---|---|
| PUT31 | | **.305** | | |
| BOUT28 | | | | |
| PRO4 | | | | |
| PRO36 | | | | |
| MFS21 | | | **.545** | |
| MFS18 | .310 | | **.479** | |
| BOUT35 | | | | **.325** |
| BOUT22 | | | | **.323** |
| % of the Explained Variance | *12.797* | *10.312* | *3.478* | *3.100* |
| Eigenvalue | *6.603* | *3.812* | *1.738* | *1.532* |

Notes. - *Items that begin with 'MFS', 'BOUT', 'PUT' and 'PRO', were respectively items that measured Making and Following a Schedule, Being Organized in Using Time, Perceived Use of Time to be Purposive and Procrastination*
- *Item Numbers are as classified in Appendix A*
- *[a]Rotation converged in 8 iterations.*
- *Loadings less than .30 were omitted*
- *Factor 1 = Procrastination*
- *Factor 2 = Perceived Use of Time to be Purposive*
- *Factor 3 = Making and Following a Schedule*
- *Factor 4 = Being Organized in Using Time*
- *Total Variance Explained by the Four Factors = 29.69%*

Table C4 Factor Structures and Loadings of Items of AMS

| **Rotated Factor Matrix[a]** | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Factor** | | | | | | |
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| IMTK12 | **.739** | | | | | | |
| IMAT11 | .696 | | | | | | |
| IMTK10 | **.668** | | | | | | |
| IMES14 | .583 | | | | | | .394 |
| IMTK2 | **.569** | | | | | | |
| IMES19 | .472 | | | | | | .308 |
| AM18 | | **.797** | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| AM13 | | **.783** | | | | | |
| AM4 | | **.737** | | | | | |
| AM9 | | **.615** | | | | | |
| IMES7 | | .398 | | | | | .389 |
| IMAT21 | | | **.747** | | | | |
| EMIR20 | | | .697 | | | | |
| EMER1 | | | | **.841** | | | |
| EMER16 | | | | .596 | | **.308** | .406 |
| EMIDR5 | | | | .498 | | **.319** | |
| EMIR6 | | | | | **.703** | | |
| EMIDR8 | | | | | .651 | | |
| EMER3 | | | | | | **.764** | |
| IMTK17 | | | .410 | | | .609 | |
| EMIDR15 | | | | | | | **.732** |
| % of the Explained Variance | *12.884* | *12.273* | *7.934* | *7.133* | *6.792* | *6.670* | *6.274* |
| Eigenvalue | *4.151* | *2.628* | *1.380* | *1.303* | *1.126* | *1.047* | *.958* |

Notes. - *Items that begin with 'IM', 'EM' and 'AM' were respectively items that measured Intrinsic, Extrinsic and Amotivation components of motivation*

- *Item Numbers are as classified in Appendix A*
- *Loadings less than .30 were omitted*
- *Factor 1 = Intrinsic Motivation to Know*
- *Factor 2 = Amotivation*
- *Factor 3 = Intrinsic Motivation to Accomplish Things*
- *Factor 4 = External Regulation*
- *Factor 5 = Introjected Regulation*
- *Factor 6 = Factor related to Extrinsic motivation*
- *Factor 7 = Identified Regulation*
- *Total Variance Explained by the Seven Factors = 59.96%*

Table C5 Factor Loadings of Minor Subscales of AMS

| | Factor 1 | Factor 2 | Factor 3 |
|---|---|---|---|
| ***Intrinsic Motivation*** | | | |
| Intrinsic Motivation to Know | **.576** | .356 | |
| Intrinsic Motivation to Experience Stimulation | **.448** | .397 | .387 |
| Intrinsic Motivation to Accomplish Things | **.854** | | |
| ***Extrinsic Motivation*** | | | |
| External Regulation | | **.504** | |
| Introjected Regulation | .434 | **.301** | |
| Identified Regulation | | **.727** | |
| ***Amotivation*** | | | **.618** |
| % of the Explained Variance | *21.989* | *16.880* | *8.032* |
| Eigenvalue | *2.771* | *1.136* | *.897* |

Notes. - *Loadings less than .30 were omitted*
- *Factor 1 = Intrinsic Motivation*
- *Factor 2 = Extrinsic Motivation*
- *Factor 3 = Amotivation*
- *Total Variance Explained by the Three Factors was about 46.90%*

In conclusion, although relatively clear factor structures were observed in the main study than in the pilot study, some minor and major subscales were not clearly identified. This was particularly true for factors named as ' Factor related to…' because not only items that loaded on them had larger loadings on other factors but also the items did not come from similar minor subscales. Thus, even though dimensionality of the scales in our context is unquestionable, further research should strive to explore more clear factor structures.

# APPENDIX D

## Semi-structured Interview for Students

The purpose of this interview was to gather information from students regarding their motivation, time management skill and approach to studying in order to support interpretations of the data that were gathered through the questionnaire.

*1. On Motivation*

- When they attend high school, many students wish to go to university. Were you happy when you passed your grade 12 entrance exam to be assigned to university? How do you explain that happiness?
- Many of your friends with whom you started your elementary or secondary school might have dropped out and begun other businesses. But you are here. Why, why are you in this university?
- Some students study some courses or some topics just because of the pleasure or satisfaction they get from it. Do you some times study for such purposes?
- Do you sometimes read some topics just because you are interested in them; not because they come on tests or exams? What kind of topics, for example…?

*2. On Time Management Skill*

- How do you organize your time for studying?
- Some students have daily study schedules for each of their courses either in their minds or on a paper. Others even plan their semester while still some others do not have/want a study schedule. Do you have any? If so, what kind of plan? Daily, weekly…?
- When an assignment is given, how do you start doing? Do you for example, first prepare an outline of contents/what should or should not be included in the assignment?
- When an assignment is given, when do you like to start doing it; immediately after it is given or when its submission date approaches? Why or Why not?

- When you begin a semester, when do you start studying; immediately after the class begun, when tests are announced, about one month before the final exam, about three weeks before the final exam…?

### *3. On Approach to Studying*

- What strategies do you use while studying?
- Do you like to concentrate on important facts and memorize them? Why? To pass tests/exams or to apply to real life situations?
- Do you sometimes ask your seniors exercise books, handouts, previous exam sheets…etc to do effectively in your courses? If so, how did these materials help you?
- Do you usually ask lecturers or your seniors to give you advice on how to study, chapters or topics that are very important to focus on for tests/examinations/assignments…? If so, how did this advice help you?
- When you study, do you try to relate what you study with: your previous knowledge in the course, in other courses or real life situations? How or Why not?
- Are you sometimes so interested in some courses or topics that you read them beyond what is required for tests/examinations or during your free time (semester or annual breaks)? How or Why not?

***Thank You!***

## APPENDIX E

## Calculation of Predominant Scores in the Components of Approach to Studying, Time Management Skill and Motivation

| Approach To Studying | | | |
|---|---|---|---|
| **Deep**<br>n = 11 (7M, 4F)<br>*CGPA = 2.92 | **Strategic**<br>n =14 (8M, 6F)<br>CGPA = 2.79 | **Surface**<br>n = 34 (16M, 18F)<br>CGPA = 2.41 | Predominance Status |
| > 60.60[a] | ≤ 50.23 | ≤ 37.62 | **Deep** |
| ≤ 60.60 | >50.23 | ≤ 37.62 | **Strategic** |
| ≤ 60.60 | ≤ 50.23 | >37.62 | **Surface** |

| Time Management Skill | | | | |
|---|---|---|---|---|
| **MFS**<br>n = 6M<br>CGPA = 3.05 | **BOUT**<br>n = 9 (7M, 2F)<br>CGPA = 2.95 | **PUTP**<br>n = 3 (2M, 1F)<br>CGPA = 2.71 | **PRO**<br>n = 43 (14M, 29F)<br>CGPA= 2.32 | Predominance Status |
| > 38.86 | ≤ 38.15 | ≤ 26.76 | ≤ 24.22 | **MFS** |
| ≤ 38.86 | >38.15 | ≤ 26.76 | ≤ 24.22 | **BOUT** |
| ≤ 38.86 | ≤ 38.15 | > 26.76 | ≤ 24.22 | **PUTP** |
| ≤ 38.86 | ≤ 38.15 | ≤ 26.76 | > 24.22 | **PRO** |

| Motivation | | | |
|---|---|---|---|
| **Intrinsic Motivation**<br>n = 16 (8M, 8F)<br>CGPA = 2.97 | **Extrinsic Motivation**<br>n = 17 (12M, 5F)<br>CGPA = 2.79 | **Amotivation**<br>n = 29 (12M, 17F)<br>CGPA = 2.41 | Predominance Status |
| > 36.54 | ≤ 33.19 | ≤ 7.96 | **Intrinsic Motivation** |
| ≤ 36.54 | > 33.19 | ≤ 7.96 | **Extrinsic Motivation** |
| ≤ 36.54 | ≤ 33.19 | > 7.96 | **Amotivation** |

[a]Numbers in the cells are average scores of the components M = Male F = Female

*CGPAs in the cells are the mean of the overall CGPAs

## APPENDIX - F

### Cumulative Grade Point Average (CGPA) and Sex of Students in the Main Study

| No. | Sex | CGPA | No. | Sex | CGPA | No. | Sex | CGPA | No. | Sex | CGPA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M | 3.54 | 19 | M | 3.33 | 37 | F | 1.92 | 55 | M | 2.42 |
| 2 | F | 1.85 | 20 | M | 3.25 | 38 | F | 2.00 | 56 | M | 2.08 |
| 3 | M | 2.62 | 21 | F | 2.17 | 39 | M | 2.49 | 57 | M | 1.76 |
| 4 | F | 2.15 | 22 | M | 3.67 | 40 | M | 2.95 | 58 | M | 2.50 |
| 5 | M | 3.92 | 23 | F | 2.00 | 41 | M | 3.16 | 59 | M | 2.00 |
| 6 | F | 2.38 | 24 | M | 3.08 | 42 | M | 2.97 | 60 | M | 4.00 |
| 7 | F | 2.08 | 25 | M | 3.75 | 43 | F | 2.00 | 61 | M | 2.34 |
| 8 | F | 2.62 | 26 | F | 1.83 | 44 | M | 2.57 | 62 | M | 3.36 |
| 9 | M | 2.77 | 27 | M | 2.42 | 45 | M | 1.92 | 63 | M | 2.00 |
| 10 | F | 2.62 | 28 | M | 3.42 | 46 | F | 2.00 | 64 | M | 2.76 |
| 11 | M | 2.31 | 29 | M | 3.50 | 47 | F | 1.81 | 65 | F | 3.11 |
| 12 | F | 2.92 | 30 | M | 3.92 | 48 | M | 2.65 | 66 | M | 3.18 |
| 13 | F | 2.69 | 31 | M | 3.67 | 49 | M | 3.30 | 67 | M | 2.08 |
| 14 | M | 3.00 | 32 | M | 2.42 | 50 | M | 2.65 | 68 | M | 2.00 |
| 15 | M | 3.23 | 33 | M | 2.33 | 51 | F | 2.16 | 69 | M | 2.37 |
| 16 | M | 3.31 | 34 | M | 3.41 | 52 | M | 2.00 | 70 | M | 2.45 |
| 17 | F | 2.31 | 35 | M | 3.00 | 53 | M | 2.24 | 71 | M | 3.82 |
| 18 | M | 2.42 | 36 | M | 3.49 | 54 | M | 3.76 | 72 | M | 2.00 |

| No. | Sex | CGPA | No. | Sex | CGPA | No. | Sex | CGPA | No. | Sex | CGPA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 73 | M | 2.84 | 91 | M | 2.67 | 109 | M | 3.58 | 127 | F | 3.68 |
| 74 | M | 2.23 | 92 | M | 2.79 | 110 | M | 3.50 | 128 | F | 2.08 |
| 75 | M | 3.26 | 93 | M | 3.62 | 111 | F | 3.25 | 129 | F | 2.37 |
| 76 | M | 1.90 | 94 | M | 3.51 | 112 | M | 2.83 | 130 | F | 2.97 |
| 77 | M | 3.31 | 95 | M | 3.28 | 113 | F | 2.33 | 131 | F | 2.24 |
| 78 | M | 3.44 | 96 | M | 2.77 | 114 | F | 2.83 | 132 | F | 2.39 |
| 79 | M | 3.56 | 97 | M | 3.46 | 115 | F | 2.83 | 133 | F | 2.24 |
| 80 | M | 4.00 | 98 | F | 2.08 | 116 | M | 2.92 | 134 | F | 2.37 |
| 81 | F | 2.13 | 99 | F | 2.08 | 117 | M | 2.67 | 135 | F | 2.39 |
| 82 | M | 2.00 | 100 | F | 2.08 | 118 | M | 3.83 | 136 | F | 2.33 |
| 83 | M | 2.15 | 101 | M | 3.25 | 119 | F | 2.67 | 137 | F | 2.13 |
| 84 | M | 2.67 | 102 | M | 1.83 | 120 | M | 3.92 | 138 | F | 2.29 |
| 85 | M | 2.36 | 103 | F | 2.00 | 121 | F | 1.75 | 139 | F | 2.84 |
| 86 | M | 2.08 | 104 | M | 3.42 | 122 | F | 3.08 | 140 | F | 2.08 |
| 87 | M | 3.31 | 105 | F | 3.17 | 123 | F | 2.92 | 141 | F | 1.76 |
| 88 | M | 3.05 | 106 | M | 2.58 | 124 | M | 2.33 | 142 | F | 1.75 |
| 89 | M | 2.21 | 107 | M | 2.42 | 125 | F | 2.00 | 143 | F | 1.81 |
| 90 | M | 3.38 | 108 | M | 3.25 | 126 | F | 2.66 | 144 | F | 2.08 |

| No. | Sex | CGPA | No. | Sex | CGPA | No. | Sex | CGPA | No. | Sex | CGPA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 145 | M | 3.26 | 165 | F | 2.73 | 185 | F | 2.15 | 205 | M | 2.42 |
| 146 | M | 1.92 | 166 | F | 2.24 | 186 | F | 3.15 | 206 | F | 2.42 |
| 147 | F | 1.92 | 167 | F | 2.65 | 187 | M | 2.45 | 207 | F | 2.00 |
| 148 | F | 3.08 | 168 | F | 2.57 | 188 | F | 2.25 | 208 | F | 2.08 |
| 149 | F | 3.37 | 169 | F | 2.43 | 189 | F | 2.38 | 209 | F | 2.08 |
| 150 | F | 1.83 | 170 | F | 3.08 | 190 | F | 2.90 | 210 | F | 2.50 |
| 151 | F | 1.92 | 171 | F | 2.62 | 191 | F | 2.23 | 211 | F | 1.92 |
| 152 | F | 1.75 | 172 | F | 2.08 | 192 | F | 2.00 | 212 | F | 2.00 |
| 153 | M | 1.92 | 173 | F | 2.24 | 193 | F | 2.23 | 213 | F | 2.33 |
| 154 | F | 2.37 | 174 | F | 2.14 | 194 | F | 2.15 | 214 | F | 2.08 |
| 155 | F | 2.29 | 175 | F | 2.46 | 195 | F | 2.30 | 215 | M | 2.31 |
| 156 | F | 1.83 | 176 | F | 2.16 | 196 | F | 2.53 | 216 | M | 2.54 |
| 157 | F | 3.24 | 177 | F | 2.32 | 197 | F | 2.00 | 217 | F | 3.77 |
| 158 | F | 3.16 | 178 | F | 3.05 | 198 | M | 3.70 | 218 | M | 2.38 |
| 159 | F | 1.84 | 179 | F | 3.35 | 199 | M | 1.90 | 219 | M | 2.23 |
| 160 | F | 2.24 | 180 | F | 2.57 | 200 | F | 2.00 | 220 | M | 2.38 |
| 161 | F | 2.73 | 181 | F | 2.08 | 201 | F | 2.15 | | | |
| 162 | F | 2.08 | 182 | F | 2.57 | 202 | F | 2.30 | | | |
| 163 | F | 2.22 | 183 | F | 2.22 | 203 | F | 2.30 | | | |
| 164 | F | 2.32 | 184 | F | 2.33 | 204 | F | 2.83 | | | |

# APPENDIX G

## Comparison of Academic Performance of Students Predominant in the Components of Variables of the Study

Figure G1 Comparison of Academic Performance of Students Predominant in Adopting Different Approaches to Studying (APTS)

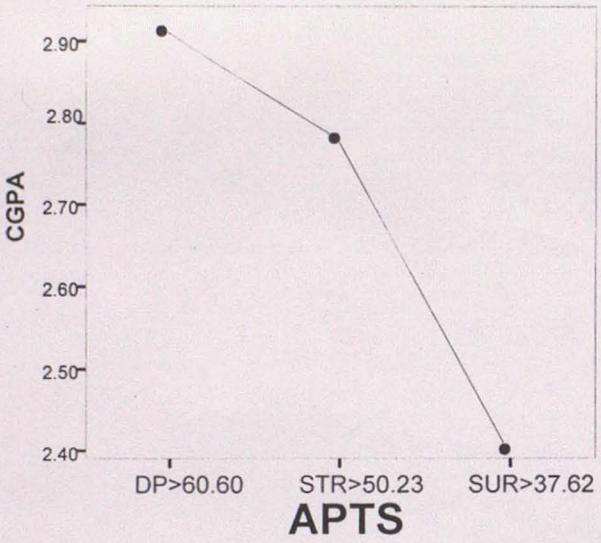



Figure G2 Comparison of Academic Performance of Students Predominant in Adopting Different Time management Skills (TMS)

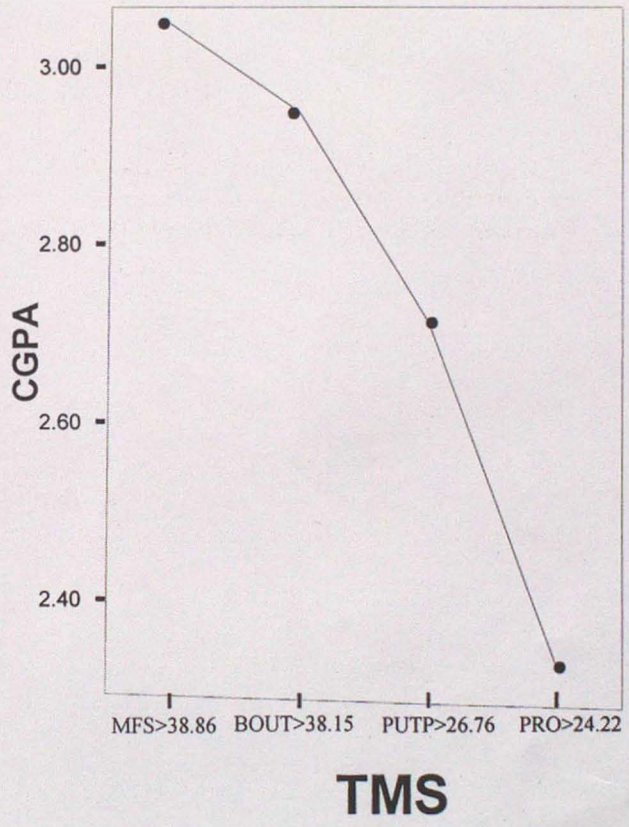
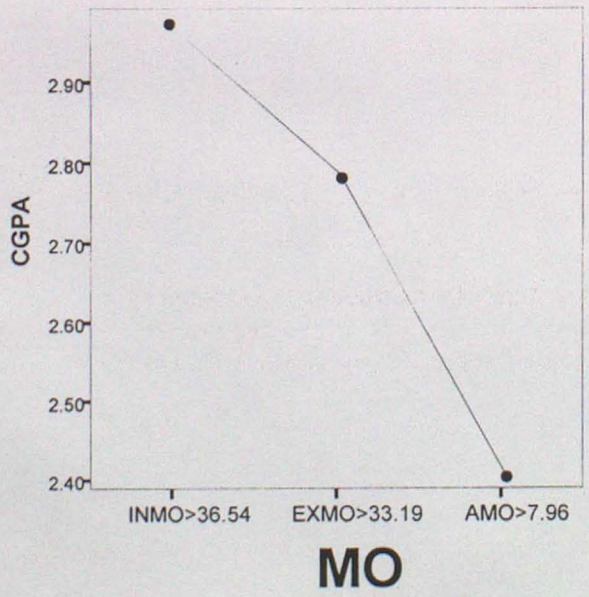



Figure G3 Comparison of Academic Performance of Students Predominant in Different Phases of Motivation (MO)



## DECLARATION

I, the undersigned, declare that this thesis is my original work, done under the guidance of Dr. Seleshi Zeleke and that all sources of materials used for the work have been duly acknowledged.

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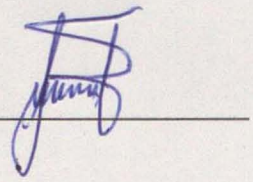
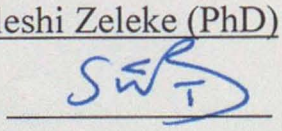
Signature: 

Place: School of Graduate Studies, Addis Ababa University

Date of Submission: 05 July 2010

This thesis has been submitted for examination with my approval as a university advisor.

Name: Seleshi Zeleke (PhD)

Signature: 

Date: 17 June 2010

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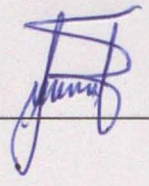
Name: Mitiku Hambisa Abdisa

Signature: 

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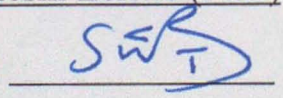
Signature: 

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