STUDENT BASED FACTORS INFLUENCING ACADEMIC PERFORMANCE AT THE UNIVERSITY OF NAMIBIA SCHOOL OF MEDICINE

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FLORINDA MARIO

200020501

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SUPERVISOR: Dr. HONORÉ KABWEBWE MITONGA (UNAM)

ABSTRACT

This research investigated the factors affecting academic performance of undergraduate students at the University of Namibia, Hage Geingob Campus. The factors considered were, educational background, university support system, preferred learning methods and family setup. The study employed the use of a cross-sectional questionnaire based survey design. The validity and reliability of research instruments was established and data was collected from 80 respondents selected from Medicine and Pharmacy final year students using the simple random sampling method. The P-value was determined for relating factors to determine the relationship between educational background, university support system, preferred learning methods and family setup on academic performance of students at the University of Namibia, Hage Geingob Campus. This formed the basis of the detailed analysis and conclusions and recommendations.

Findings from the study showed that socioeconomic status of parents have an influence on the academic performance of the students. This was determined from access to electricity and having shebeens at a close radius. Findings also revealed that there is a significant relationship between students' admission criteria and their academic performance as fluency in the language English affects many students negatively. The researcher concluded that the university must not only focus on admission points but also create good support systems for the less fortunate students and also create extensive exams for mature entry. This is to determine their competency and prepare their minds for the pressure they are to get in.

The researcher recommended that the admission criteria at the University of Namibia, Hage Geingob Campus is maintained and previous academic performance as a measure of admitting students for undergraduate programs. However mature age students could be given a probation

year to test their competency in addition to the entrance exam. The university should improve the student support system.

The study uncovered a gap and therefore recommends further study in determining the effect of management on student academic performance at the University of Namibia, Hage Geingob Campus and effect of admission points between international students on academic results.

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Signed.....

DEDICATION

First and foremost, I give thanks to the Almighty for having blessed me with a supportive family (my husband, sons, mom, dad, brothers and sister) to whom I am dedicating this thesis.

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A special feeling of gratitude goes to my loving husband Vasco Mandavela Mario who supported me throughout the process. Our sons, Shawn Vasco Mario and Jayden Evaristus Mario were a great source of strength and motivation knowing that I am doing it for them.

DECLARATION

I, Florinda Mario, hereby declares that this study is my own work and is a true reflection of my research, and that this work, or any part thereof has not been submitted for a degree at any other institution.

FLORINDA MARIO		11/04/19
Name of Student	**Signature**	**Date**

CHAPTER ONE

1. INTRODUCTION

1.1 Orientation of proposed study

The credibility of colleges and Universities is dependent on the performance of students. Students play a key role in the social and economic development of the country and this development is associated with their academic performance. It is part of an institution's obligations to produce graduates who have the capability to become great leaders, responsible for the country's economic and social development (Ali,Jusoff, Ali, Mokhtar, & Salamat, 2009).

The University of Namibia (UNAM) is one of the country's leading institutions of higher learning, established in 1991. The UNAM medical school was established in 2010 and that saw the study of Medicine and Pharmacy being introduced for the first time in the country. This became the first Medical school in Namibia and like any new University would face challenges. It however, has the potential to grow. Nevertheless, it has recorded a high number of student failure rates leading to students having their loans revoked. This highlights a need to improve the academic performance of students at Namibian institutions of higher learning, especially that they are public-funded and take a significant share of the government's allocation and utilisation of financial resources.

Namibian University students get sponsorship in the form of either grants or loans. This has enabled the achievement of equal educational opportunities through the concerted efforts of the Ministry of education. The Namibia students Financial Assistance Fund (NSFAF) Policy is a loan/grant scheme designed to replace the public service

bursary scheme aimed at training people to work solely in the civil service (Matengu, Likando & Kangumu, 2014). Since factors that influence academic output of institutions are also dependent on the location or setting, there is a need to conduct studies in order to identify the underlying factors in a specific setting (Mlambo, 2012). Most studies aimed at investigating factors influencing student academic performance have focused on three attributes of: family influence, teaching style and students' effort or character (Díaz, Cintas & Orero, 2003). This study will focus on investigating the factors affecting student academic performance by assessing selected factors of: age, learning preference, previous school performance and class attendance. The findings of this study may also be used at other institutions to help address poor academic performance of students although these factors vary from place to place, person to person and country to country.

1.2 STATEMENT OF THE PROBLEM

The University of Namibia School of Medicine is currently experiencing poor academic performance of students. This situation is undesirable because: increased failure is expensive for investors when there is no academic progressive output; prospects of admission of high school learners to be enrolled for medical studies are highly reduced due to lack of spaces. Furthermore, there is lack of information useful for the development of strategies to help the medical students enhance their academic performance, because the factors contributing to their poor performance are unknown. This study therefore intends to investigate the factors that affect the academic performance of students at the University of Namibia's School of Medicine.

1.3 Main Objective

- To investigate the factors that lead to poor study performance of medical students at the University of Namibia's School of Medicine.

1.4 Objectives of the study

- To investigate the effect of entry qualification on study performance.
- To investigate factors that influence academic performance of medical students in the University of Namibia namely: environmental setting, age of the students, learning preferences, enthusiasm, parents' level of education, students' efforts, high school education, class attendance and its influence on student academic performance.
- To assess the gap in knowledge between high school subjects and University of Namibia School of Medicine module content.

1.5. Research Hypotheses

Most studies aimed at investigating factors influencing student academic performance have focused on three attributes of: family influence, teaching style and students' effort or character (Díaz, Cintas & Orero, 2003). Although studies have been carried out in different institutions regarding the factors that influence academic performance, these factors tend to be addressed differently due to the variations in challenges faced in different institutions and geographic settings. Studies have revealed that: former schools (Mlambo, 2012), parents' level of education and income (Devadoss & Foltz, 1996), enthusiasm, age of student, learning preferences (Arpin, Mahmood, Rohaizad, Yeop, & Anuar, 2008), and class attendance (Romer, 1993) are some of the

reasons for poor performance in schools. The following statements will be studied to develop congruent conclusions.

H_{01}: Family setup of undergraduate students does not affect their academic performance.

H_{11}: Family setup of undergraduate students affects their academic performance.

H_{02}: Academic background does not affect the academic performance of undergraduate students.

H_{12}: Academic background affects the academic performance of undergraduate students.

H_{03}: Student support system offered by the University does not affect academic performance of undergraduate students.

H_{13}: Student support system offered by the University affects academic performance of undergraduate students.

H_{04}: Academic performance of undergraduate students is not affected by their preferred learning methods

H_{14}: Academic performance of undergraduate students is affected by their preferred learning methods

1.6 Significance of the study

The results of this study will provide information regarding the causes of poor academic performance at the University of Namibia's School of Medicine and formulate possible solutions that can improve the academic performance of students. The results of this study will also serve as a guide in order to implement a system that improves the throughput of the University and increase prospects of admission allowing incoming high school learners to be enrolled for medical studies due to adequate spaces. In addition, an improved academic performance will lower the cost on the investors.

1.7 Limitations of the study

Respondents might not give truthful answers due to the sensitive nature of the study. Students operate on pressed schedule hence getting respondents was a challenge due to their tight study schedules. Use of the questionnaire as research instrument had limitations as the researcher could not observe the expressions of the respondents as in an interview.

1.8 Delimitations of the study

The information proposed for analysis in this study is student academic performance data between the years 2010 and 2016 at the University of Namibia School of Medicine only. This implies that student academic performance at other University of Namibia campuses and institutions of higher learning in Namibia will not be considered in the present study. In addition, this study will be based on questionnaire and will rely on the authenticity of student answers to accurately measure academic performance (VARKR questionnaire for student's learning preferences). Therefore, all results and conclusions will be based on the University of Namibia's School of Medicine student academic

performance and are not to be subjected to generalisations beyond the population of interest.

1.9 Outline of the study

Table 1.1 Outline of the study

Chapter 1	**Introduction and Background of the study**	This chapter introduces the research study, highlighting the problem statement, objectives, significance of the study, limitations and delimitations of the study.
Chapter 2	**Literature review**	This chapter provides a review of literature from various authors and other researchers on the topic under study.
Chapter 3	**Research Methodology**	The chapter outlines the research methodology used to collect and analyse data and how the sample was selected.
Chapter 4	**Results and Discussion**	This chapter presents, analyse and discuss the data that was collected through the research instrument indicated in the previous chapter.
Chapter 5	**Conclusion and Recommendations**	This chapter concludes the research study and provide recommendations on the findings of the study as well indicating areas of future study.

Source: Research study

CHAPTER 2

LITERATURE REVIEW

2.0. Introduction

Studies have been carried out assessing the factors affecting the academic performance of students in different institutions of higher learning (Anderson & Benjamin, 1994; Mlambo, 2012). It has been revealed that student academic performance varies with environmental setting and is noticeably influenced by: University admission qualifications, age of the student, learning preferences, enthusiasm, family income, parents' level of education, student's effort, high school education and class attendance (Arpin *et al.*, 2008; Mlambo, 2012). In addition, gender, medium of instructions, role of teaching faculty, socio economic status, adjustability with the peer groups, and understanding the language have also been reported to influence academic performance among medical students (Kannan and Praveena, 2015).

University admission qualifications affect the academic performance. Generally, students admitted on the basis of their high qualifications tend to be more prepared than those that barely met the minimum admission criteria. This is because academic knowledge is collective and thus would favour a student admitted with higher scores. Hence it is vital that institutions take into account the knowledge the incoming students possess when compiling a curriculum so as to fill some possible existing gaps in knowledge and thus accommodating students with lack of a firm foundation on the academic subject in question.

Student learning preferences influence academic performance. Learning preference is defines as an individual's ideal way of assimilating new information naturally (Reid, 1995). Mushtaq (2012) revealed that teaching style has a positive effect when there is complementarity between students' learning preferences and the instructor's style of teaching. The difference in effectiveness of the mode of instruction and studying in different students suggests that the students' learning preference should be first determined and to enable effective teaching that best suits their learning style (Pashler, McDaniel, Rohrer, & Bjork, 2008). According to Ormrod (2008), students' leaning preference can be classified into: verbal learners that understand better when information is presented, visual learners who understand better when information is delivered by the use of pictures. Various methods are used to determine students' learning preferences, making use of questionnaires that are presented to the student to get their opinion on which learning style they prefer. However, the Visual/Aural/Read and Write/Kinaesthetic (VARKR) questionnaire has gained popularity. The VARKR describes four types of learning preferences as:

1.0 Visual learners who favour learning through any means of graphics such as whiteboard, flip charts, walls, graphics, pictures, colour and mostly used diagrams when studying to help recall.

2.0 Aural (or oral)/auditory learners who are also known as back benchers (like to sit at the back and listen). They prefer listening and may even record the lesson to play back later.

3.0 Read/write learners who prefer taking notes as they read information and make the most of study guides.

4.0 Kinesthetic learners who are active in class but like fidgeting and fiddle with things as they learn.

Some students seem to possess features that are found in more than one group. These are referred to as multimodal learners. The preferred learning style can also vary according to different subjects (Mlambo, 2012). However, Mlambo (2012) did not find a significant influence on academic performance after investigating the factors affecting student academic performance in an introductory biochemistry course at the University of the West Indies.

Class attendance can influence the academic performance of students. It has been disclosed that poor class attendance results in poor performance of students in examinations especially if the absences were multiple (Devadoss & Foltz, 1996; Durden & Ellis, 1995; Newman-Ford, Lloyd & Thomas, 2009; Park & Kerr, 1990; Romer, 1993; Schmidt, 1983). However, Rodgers and Rodgers (2003) argued that these findings face a limitation of the failure isolating class attendance from student characteristics such as: enthusiasm, intelligence, prior learning, and time-management skills. In addition, the ability of students to access internet-based learning raises a challenge in relating poor performance to poor class attendance.

Entry qualifications and prerequisites play a role in the academic performance of students. Many medical institutions among other characters focus on selecting students that possess high marks which seems to reflect the student's level of understanding of their prior knowledge. Mlambo (2012) argued that learning is a continuous process implying that students that possess high entry marks are most likely to well prepare for

course material in comparison to students admitted based on the bare minimum qualifications.

There are other determinants of academic performance that have been investigated such as; age and gender. Studies (Haist, Wilson, Elam, Blue, & Fosson, 2000; Woodfield & Earl-Novell, 2006) have revealed that gender has an influence on academic performance depending on the setting. Their findings indicated that men perform better than women in certain settings while women outperform men in other settings while Borde (1998) found no relationship between academic performance and gender. Age has been found to influence the academic performance of students describing mature students (21 and above) as being the likely ones to have a good performance (Newman-Ford *et al.*, 2009; Richardson, 1994). Family income, enthusiasm and parent's level of education have not been widely researched and suggest a need to explore how these factors contribute to academic performance. Self-motivation has however, shown a positive outcome in the academic performance of an individual, and the students social and economic status have revealed a relationship that is moderate to strong in relation to academic performance (Mlambo, 2012; Sirin, 2005).

Considine and Zappalà (2002) disclosed that understanding the language and the level of confidence plays a role in academic performance. In addition, it was found that peer groups and parental pressure is an effective contributor towards poor performance in students. This is in agreement with Manivasakan, Sethuraman, and Usha (2016) who suggest that social care of students influences the academic performance, thereby increasing it with adequate parental support and highlighting the role of the environment in alleviating academic performance. In addition, poor academic performers display a

correlation with absenteeism in classes, and most students find self-directed learning challenging compared to attending lectures. This derives the suggestion that mentorship programs and group discussions can potentially improve performance.

Chinawa *et al.*, (2013) investigated the performance of medical students in Paediatric examinations and associated factors. The findings indicate that high failure rates in examinations were a result of a lack of objectivity of assessment methods. Some modes of assessments have been criticized such as the traditional long and short cases and examiners behavior (bias and mood swings) during assessments have been attributed to failure. Chinawa *et al.*, (2013) revealed that students prefer Objective structured clinical examination (OSCE) in comparison to the long and short cases examinations. OSCE's are designed to assess clinical competencies such as; physical examination, history-taking, communication skills and data interpretation. This corroborates with Leach (2001) and Cremers (2005). However, OSCE's have also received reproach in that it lacks objectivity, validity, and practicability. Proponents argued that OSCEs assess the knowledge and skills of in a compartmentalized fashion and limits the exposure to actual patients (von Below *et al.*, 2008). This suggests that exposure of students to actual patients improves the student's clinical experience in communication skills, clinical skills, teaching skills, patient management skills and team-work skills (Chinawa *et al.*, 2013).

Gender has been observed to play a role in the academic performance. Female medical students have been reported to perform better than males (Calvert *et al.*, 2009). This rather seems to be unusual given that males have a higher brain volume compared to females highlighting no correlation between brain physiologies between sexes to differences in intellect. However, these results are not in agreement with Jung *et al.*, (2005) and

Cosgrove *et al.*, (2007) who argued that men and women obtained comparable IQ results with various brain regions. Abdullah (2011) argued that the ultimate factor with a positive result on academic performance is the level of competence of the students in English. It can be argued that students who are highly competent in English are able to grasp most concepts easily as compared to their counterparts that are poor in English.

Noble (2006), however advocates that academic undertakings by students, their academic adapting skills and background qualities have a noticeable impact on their performance. Background qualities encompass the contribution from guardians such as family income and academic guidance, level of education and motivation from parents. The results indicated a relationship between student academic compound scores and the background quality especially when the student is provided with direction on how to succeed in their studies and the approach to take such as study schedules. Students with adequate guidance were able to perform better that than their counterparts.

In a study aimed at assessing the impact of the learning facilities, communication skills and proper guidance from parents on the students, Singh, Malik, and Singh, (2016) disclosed that good communication skills, improved learning facilities, and proper guidance from parents have a positive and statistically significant outcome on students' performance. In addition, it was indicated that the most contributing factor was learning facilities, followed by communication skills and effective guidance from parents. This is in agreement with previous studies (Hansen, 2000; Apam & Luguterah, 2013) who disclosed that academic performance is improved with adequate guidance from parents and Noble (2006) who argued that good learning facilities positively affect academic performance.

2.1. Ability and academic performance

Ability is the vital factor to academic performance. Ninis & Wright, (2003) identified ability as the basis of academic performance. Also, according to Jensen (1998), cognitive ability is the strongest factor of academic performance. However, Eeden, Beer and Coetzee (2001) argue that verbal abilities are the great determinants of academic performance. They conducted a study among 224 engineering first year under graduate students and other sciences in the Republic of South Africa and found that verbal abilities have a significant impact on academic performances. Nevertheless, the study failed to prove or reveal the significance and impact of non-verbal abilities on the first-year academic performance. Thus, verbal abilities appear to be stronger predictors of academic success in the first year of study than do non-verbal abilities.

This latter view is also depicted by Zeegers (2004) who identifies language proficiency as a factor directly impacting the academic performance of students in the first and third year of study. He identifies language proficiency as an important predictor of academic performance, even in science-related courses. Thus, language proficiency, as a measure of verbal ability, can be considered as a significant determinant of academic performance in the university. It is therefore necessary for undergraduate students to seek for language proficiency in the medium of instruction used in their institution of learning. Ability on its own is not a sufficient determinant of academic performance in the university (Nonis & Hudson 2006). Jensen (1998) reports the relationship between cognitive ability and academic performance to reduce with students' progression in the education system. This implies that the relationship between cognitive ability and academic performance is weaker at the university level than it is at either the primary or

secondary school level. The interplay between academic performance and other factors appears to increase as a student progresses from primary to secondary school levels and to tertiary levels of education institutions.

Tickell and Smyrnios (2005) observe that, whereas ability directly contributes to academic performance of first year psychology students, its direct effect reduces in progressive years of study in the university. This shows that other factors appear to contribute to academic performance as one progresses from one year of study to the next. Nonis and Wright's (2003) study among college students reveals that personal internal variables become as important as ability in determining academic performance at the tertiary level of education. Personal variables identified as interacting with ability include motivation and time spent studying (Nonis & Hudson 2006). Noting that the effect of ability on academic performance reduces as other variables come into play, this study will endeavour to establish the effect of other variables on the academic performance of students in the university.

2.2. Prior high school performances and undergraduate academic performance

Studies have shown a relationship between high school performance and performance in the university. According to Karemera, Reuben and Sillah (2003) and Salahdeen and Murtala (2005), high school grades are good predictors of performance at the university. In addition, Ofori and Charlton's (2002) path model of factors influencing academic performance of nursing students identifies entry qualifications as having a direct impact on academic performance.

Several studies have looked at the effects of high school performance on the academic performance of undergraduate students. Studies done by Hall (2000), Eeden, Beer and Coetzee (2001) and Robbins, Allen, Casillas, Peterson and Le (2006) among first year undergraduate students concur with regard to the positive and significant effect of high school performance on academic performance. Performance on specific high school subjects is also found to enhance first year undergraduate students' academic performance. Eeden *et al.,* (2001)'s study among 224 first year students of the engineering, science and technology departments of a university in South Africa, using a three stepwise regression analysis reveals high school marks in Science, English and Mathematics to positively relate to their academic performance at the university. Thus, performance on specific high school courses appears to influence performance of undergraduate students. The latter study was carried out among students pursuing mainly science related courses. It would be interesting to establish what specific high school subjects have an effect on performance in specific undergraduate courses.

Tickell and Smyrnios (2005) established that good performance in high school accounting courses predicts good performance at all levels of undergraduate accounting students' programme. Although many studies have looked at the relationship between high school performance and first year students' academic performance very few studies have addressed the effect of prior high school academic performance on the academic performance of students in higher years of study. According to Ofori and Charlton (2002), high school performance has the highest significant effect on the academic performance of undergraduate students in the short term. However, as a student progresses with his/her studies, the effect of high school performance on academic performance reduces and tends

to become indirect, being mediated through the short-term measures. Zeegers' (2004) further observe that while prior high school performance is the greatest predictor of academic performance in students' first semester in the university, this is not the case in the second semester of study. The effect of prior high school academic performance weakens in the second semester of study. Other factors come into play at higher levels. The latter conclusion is also supported by Zeegers' (2004) path analysis models among 1st and 3rd year students. The models depict prior high school academic performance as being the single largest direct predictor of academic performance in the 1st year of studying sciences but not in the 3rd year of study.

Zeegers' (2004) study fails to adequately look at the effect of high school academic performance on the academic performance of students in the 3rd year of study, instead it emphasises on the positive effect of previous cumulative undergraduate GPAs on the 3rd year students' academic performance. Tickell and Smyrnios' (2005) study also provide further support to the latter study by depicting the prior year's aggregate academic performance as a significant and positive predictor of the following year's academic performance. Thus, it could be assumed that good high school examination grades would result in good 1st year undergraduate grades; good 1st year grades will result in good 2nd year grades; good 2nd year grades would result in good 3rd year grades; and consequently, good 3rd year grades would result in good 4th year grades.

It is clear from literature presented earlier that prior performance is not the only variable that interacts with academic performance of undergraduate students. Ofori and Charlton (2002) point out that, although students' entry qualifications have direct effects on students' academic performance, their effects are not as great as those of support-

seeking. According to Ofori and Charlton (2002), students' learning strategies, one of which is support-seeking, could compensate for the effects of low entry requirements on the academic performance of students.

The studies above reveal that prior high school performance is one of the highest contributors to academic performance in the 1st year of study. However, in higher years of study, other factors appear to significantly interact with academic performance, thus reducing the effect of high school performance on academic performance.

2.3. Age and academic performance

Recent trends in the enrolment of students in the universities reflect an increased presence of older, mature-aged adult students returning to take their undergraduate degree courses (Eppler, Carsen-Plentl & Harju 2000, Cantwell, Archer & Bourke, 2001, Keith, Byerly, Floerchinger, Pence & Thornberg 2006). According to Cantwell *et al.*, (2001), there has also been an increased acceptance of non-traditional qualifications to undergraduate programmes.

Two unique types of students are currently found in the universities. They are the traditional students, who join the university immediately after high school and range from 18-23 years of age and non-traditional students, who are above 24 years of age and join the university several years after completing their high school education, using non-traditional modes of entry (Eppler *et al.*, 2000 & Cantwell *et al.*, 2001). The entry academic requirements of non-traditional students may be much lower than those of their traditional counterparts. Cantwell *et al.*, (2001) observe that over the past decade there has been an increased shift in the age of students and their mode of entry into undergraduate

programmes of universities. They attribute this shift to equity that has provided second chances to those who, for various reasons, including poverty, gender discrimination and early school leaving, did not have the opportunity to enter the university directly after high school. Two unique age sets therefore exist in the universities. They are the adolescents and the adults (Banks & Thompson, 1995). While many of the traditional students in the university are adolescents, the non-traditional students are mainly adults. Academic differences are observed between the adolescents and the adult learners.

A study carried out by Salahdeen and Murtala (2005), among 54 students of Lagos State University Medical School in Nigeria, shows that students who are aged less than 19 years outperform those who are aged over 19 years in their first year of study. This difference may be attributed to initial adjustment problems of older students in their first year of study (Salahdeen & Murtala 2005). On the other hand, other studies endorse that older students outperformed their younger counterparts in their academics (Darkenwald & Novak 1997, Eppler *et al.*, 2000, Cantwell *et al.*, 2001 & Keith *et al.*, 2006). Hall (2000) is of the opinion that being over 25 years of age is a good predictor of academic performance in the universities. The inconsistence in the results of the studies created interest in the current study determining the relationship between age and academic performance. As pointed out by Salahdeen and Murtala (2005), the difference in favour of the younger students may only be experienced in the students first year of study due to adjustment related issues, which, when overcome, place the older students in a more advantageous position than their younger counterparts.

A study carried out by Richardson (1995) among 38 non-traditional students and 60 traditional students of Brunel University points out that non-traditional students

perform better than traditional students on meaning-oriented examinations but perform worse than traditional students on reproducing examinations. In essence, there are academic differences across age groups. Distinct features are observed between the adolescents and the adults in relation to their academics. These distinctions are both in the areas of cognition and psychosocial aspects, which likewise affect their academics.

There appears to be mediators between age and academic performance that render the effect of age on academic performance indirect. One study that shows the indirect effect of age on academic performance is that of Ofori and Charlton (2002). According to Ofori and Charlton (2002), support-seeking positively mediates the effect of age on academic performance while entry qualification negatively mediates the effect of age on academic performance. Thus, the older the student the more support-seeking they are and thus the higher their academic performance. Conversely, many of the older students may be non-traditional students who enter the university with lower grades than would the traditional students. Lower entry grades have been found to negatively impact academic performance especially in the first year of study. Zeegers' (2004) model proposes age to indirectly affect academic performance through the deep learning approaches practiced by older students.

Age has been identified as having both direct and indirect effects on academic performance. Indirect effects result from the presence of mediators that subsequently affect academic performance.

2.4. Gender and academic performance

Yates and James (2006) did a study to predict strugglers at Nottingham University in the UK. They proved that male medical students tend to struggle more than female students. Another study that was done in Austria, at the Vienna Medical School, however, found that male gender is one of the three factors which are relevant in predicting academic success (Frischenschlager, Haidinger & Mitterauer 2005).

Craig, Gordon, Clark, & Langendyk, (2004) ascertained no significant differences based on gender for single best answer assessments, but female students perform better in the modified essay question assessments. James and Chilvers (2001) also came to the conclusion that female gender is a highly significant predictor of success in obtaining honours at Bachelor of Medicine, Bachelor of Surgery (BMBS) in the cohorts between 1986 and 1990, but also that gender is no predictor for success in examinations in the earlier years of the medical programme at Nottingham Medical School (James & Chilvers 2001).

2.5. Motivation and academic performance

Motivation is the driving force that catalyses and maintains behaviour (Richter 2001, & Mwamwenda 2004). Thompson (2004) defines motivation as 'the super highway to learning". Motivation contributes to academic performance and is inevitable for the academic success of undergraduate students. Nonis and Hudson (2006) observe academic performance to be a multiplicative function of both ability and motivation.

Models have been developed to portray the relationship between motivation and academic performance. These models have involved motivational variables that are

observed to influence the academic performance of undergraduate students. Tuckman's (1999) triplicate model considers motivation to consist of three generic motivational factors. These are *attitudes* or beliefs that people hold about themselves, their capabilities and the factors that account for their outcome; *drives* or the desire to attain an outcome based on the value people place on it; and *strategies* or techniques that people employ to gain the outcomes they desire. This latter view supports that of Abry (1998) that regards metacognitive strategies of planning, monitoring and utilization of feedback, locus of control and self-efficacy, which are motivational variables, as predictors of the academic success of undergraduate students.

Abry and Tuckman (1998), on the other hand, developed a causal model that reflects self-efficacy to represent attitudes; intrinsic values, test anxiety and goal orientations to represent drives and self-regulation to represent strategies. In addition, Robbins *et al.,* (2006) considers the need to belong to reflect a drive motivation; academic goals, performance goals and mastery goals to reflect goal motivations and self-efficacy and outcome expectations to reflect expectation motivations. According to Robbins *et al.*,, self-worth, drives, goals and expectations are factors associated with the adjustment and outcomes of undergraduate students.

This study specifically looks at students' expectations, which are students' attitudes towards their academic success: drivers, which include intrinsic and extrinsic goals and strategies adopted by the students in their learning process as motivational constructs, possibly associated with academic performance. Due to their observed nature as predictors of the choice of learning strategies that students adopt, both attitudes and goals are addressed in details in this section. Smith (2001) considers attitudes, and

specifically self- efficacy and attributions, which refer to the locus of control and goals to constitute self-motivation. Therefore, strategies, though believed to be motivational constructs, will be addressed separately due to their extensiveness and their dependency on attitudes and goals.

2.5.1 Attitudes

Attitudes contribute to academic performance (Facey-Shaw & Golding 2005). Two attitudes found to influence academic performance are self-efficacy and locus of control (Tuckman 1999). Self-efficacy refers to the belief or lack of belief in one's personal capability to master a situation (Smith 2001). It is the confidence in one's ability to perform a task (Bandura 2001, Hunt 1997, Langley 2004). It is the judgment students make about their capability to accomplish a specific future task (Alderman 1999). Self-efficacy relates to the willingness to undertake challenging tasks, persist at tasks and successfully perform them (Harrison, Rainer, Hochwarter & Thompson 1997).

Smith (2001) pointed out that the belief that one can perform a required task to produce a specific outcome increases one's self-confidence leading to situation-specific efficacy. According to her, belief in one's own efficacy influences the choice of tasks and amount of effort made, both of which relate to self-regulatory learning strategies, and also influences one's persistence at a task, which closely relates to conscientiousness, which is a personality trait that measures how organized and persistent one is in pursuing particular tasks (Buchanan 2001). According to Wilson and Corpus (2005), increasing the students' belief in their own capability to achieve, perform and apply skills could cause them to experience a sense of control over their learning.

Several factors are found to influence self-efficacy. According to Bandura (1997), Carroll and Garavalia (2004) and Mwamwenda (2004) these factors include mastery experiences, identifying with people similar to oneself, managing task demands successfully, social persuasion that one has the capability to succeed in given activities and inferences from somatic and emotional states that indicate one's personal strength. According to Carroll and Garavalia (2004), high achieving students have greater self-efficacy than low achieving students. It is therefore important that parents, teachers and the community develop students' self-concept and self-worth so as to make them valued individuals and thus positively impact on their academic performance (Lingren 1995).

Several studies have shown positive relationships between self-efficacy and academic performance (Harackiewicz *et al.,* 2002, Ofori & Charlton 2002, Carroll & Garavalia 2004, Facey-Shaw & Golding 2005). Tuckman (1999) observes indirect effects of self-efficacy on academic performance, when mediated through students' goals. Other studies, however have found no significant relationship between self-efficacy and academic performance of undergraduate students. One such study is that of Zeegers (2004) that observes no significant relationship between self-efficacy and academic performance of 1st year students. However, his study regards self-efficacy as having positive direct effects on the academic performance of 3rd year students.

Liddell and Davidson (2004) also observe no relationship between self-efficacy and the academic performance of final (6th) year medical students of Monash University in Australia. The latter two studies reveal the possibility of an interaction between self-efficacy and year of study, which may result in differing results with regard to the impact of self-efficacy on academic performance. According to Liddell and Davidson (2004),

self-efficacy increases with learning. Thus, it is expected that as students' progress from one year of study to the next, their self-efficacy increases. This latter observation by Liddell & Davidson (2004) may provide sufficient explanation as to why Zeegers' (2004) study shows no impact in the 1st year of study and significant positive effects in the 3rd year of study. McKenzie, Gow and Schweitzer (2004) further explain that students in their 1st year of study may not yet have formed an accurate perception of their own ability to perform in the university. Liddell and Davidson (2004) however goes on to point out that increased confidence could actually represent undesirable changes such as emotional hardening, in which students become more confident and less sensitive to their academic performance. The latter explanation fits to explain why self-efficacy was not a variable accounting for the academic performance of final year students. It therefore appears that self-efficacy would impact on academic performance differently depending on one's year of study. This study will seek to establish the differential effect of self-efficacy on academic performance in the various years of study.

Interactive effects have also been experienced between self-efficacy and other variables, which may influence the academic performance of undergraduate students. One such effect is considered in Cassidy and Eachus (2000)'s study that demonstrates a positive correlation between academic self-efficacy and internal locus of control beliefs, deep and strategic study approaches and self-confidence. The study further reveals a negative correlation between academic self-efficacy and external locus of control beliefs and surface and apathetic study approaches all of which strongly relate to motivation. Ofori and Charlton's (2002) study reveals stronger self-efficacy to lead to higher outcome expectations and fewer academic worries. Carroll and Garavalia's (2004) study also

identify self-efficacy as an important determinant of students' goal-orientation, behaviour and ultimately performance. They observed self-efficacy to affect students' choice of activities, amount of effort expended and levels of persistence in times of difficulty, all of which are aspects of students' learning strategies. Driscoll (2005) also observed students with little confidence in their abilities to display helplessness when faced with high performance goals. On the other hand, students with high confidence in themselves seek challenges and demonstrate persistence towards the task when faced with similarly high-performance goals.

Other studies have shown self-efficacy to be a mediator of academic performance. One such study is that of Diaz, Glass, Arnkoff and Tanofsky-Kraff (2001), which depicts trait anxiety, test anxiety and communication apprehension to negatively impact on self-efficacy and thus academic performance. Ofori and Charlton (2002) also observe high entry qualifications to positively impact on students' self-efficacy beliefs and thus academic performance.

It is therefore clear that self-efficacy is an important variable to reckon with in academic performance. Self-efficacy is observed to have both direct and indirect effects on academic performance, and in some cases, to be a mediator to academic performance. The impact of self-efficacy on academic performance is also found to vary from one year of study to the next. This study sought to investigate the direct and indirect effects of self-efficacy on academic performance.

A second attitude that is identified as contributing to academic performance is the locus of control beliefs. The locus of control beliefs, which refer to the attributions of

causality, are associated with academic performance (Cassidy & Eachus 2000). Cassidy and Eachus (2000) consider individuals to attribute success or failure to either internal or external factors. Attributions of successes or failures to internal factors are considered to be internal control beliefs while attributions of successes or failures to external factors are considered to be external control beliefs. According to Cassidy and Eachus (2000), students who attribute success to internal factors are likely to expect future success. However, students who attribute failure to internal factors may expect future failure unless they consider themselves capable of and actively address these internal factors. Conversely, Cassidy and Eachus (2000) observe that attributing success to external factors would make future success unpredictable and render the student powerless to address what he/she perceives to be an uncontrollable factor. Ofori and Charlton (2002) observe older students to have stronger internal control beliefs than younger students.

Interactive effects have been observed between the locus of control and other variables associated with academic performance. Cassidy and Eachus (2000) observe significant positive correlations between the internal locus of control beliefs and deep and strategic study approaches and self-confidence. They also observe significant positive correlations between external locus of control beliefs and surface and apathetic study strategies and significant negative correlations between external locus of control beliefs and deep and strategic study approaches.

According to Cassidy and Eachus' (2000) study, students with internal locus of control beliefs will tend to embrace more of deep learning approaches while students with external locus of control beliefs will tend to embrace more of surface learning approaches. This may result from the fact that the more students believe that their learning can be

attributed to forces in their control, the more likely they are to be motivated to learn (Smith 2001). Ofori and Charlton (2002) also observe the positive relationships between internal control beliefs and academic performance to be mediated through support-seeking, which is associated to students' self-regulatory learning strategies.

The current study sought to establish the relationships that exist between attitudes, which are specifically, self-efficacy and locus of control, and academic performance of undergraduate students in Kenya. It should be noted at this point that high self-efficacy appear to positively correlate with internal locus of control while low self-efficacy appears to positively correlate with external locus of control. This implies that students who have high self-efficacy also tend to attribute their success and failures to factors within themselves while those with low self-efficacy attribute their success and failures to factors out of their control.

2.5.2 Drives

One potential source of the drive to perform is the incentive value of the performance (Tuckman 1999). Value beliefs refer to the students' interest in the subject and their views about the use and importance of the subject. Tuckman (1999) points out that, incentive theories of motivation suggest that people will perform an act when its performance is likely to result in some outcome they desire or that is important to them. Enhancing the intrinsic value of studying, and therefore a student's drive to engage in a given task, affects one's goals and self-efficacy, thus influencing performance (Abry & Tuckman 1998, Liddell & Davidson 2004, Erez 2005). Tuckman (1999) regards the incentive value of a task as an important determinant of the choice of tasks a student opts for. He holds the opinion that individuals do tasks that they positively value and avoid

those that they negatively value. In other words, value as a drive dictates goal orientations and students' learning strategies.

Test anxiety, which is also a manifestation of drives, is identified as having a negative impact on academic achievement (Tuckman 1999). The negative effect of test anxiety on academic performance is greatly mediated through self-efficacy, which then influences academic performance.

According to Locke and Latham (2002), goals are the immediate regulators of behaviour and greatly determine academic performance. They direct effort towards relevant actions (Schunk 2001, Smith 2001) individuals' attention to relevant task features, behaviours to be performed and potential outcomes (Schunk 2001). Schunk (2001) also considers goals to have potential to affect how people process information. According to Carroll and Garavalia (2004), goals influence students' choice of achievement tasks and selection of learning of problem-solving strategies, thus influencing performance. They energize events and enhance persistence and strategy development (Erez 2005). Goals can be divided into assigned goals and self-set goals (Carroll & Garavalia 2004). Assigned goals reflect goals placed upon the student by others, they are extrinsic in value. On the other hand, self-set goals are intrinsic in value. It is therefore difficult to separate values from goals since values appear to dictate goals. Carroll and Garavalia (2004) categorize goals and specifically the goal to achieve into two main categories, namely, intrinsic oriented goals and extrinsic oriented goals.

Intrinsic or mastery-oriented goals are characterized by the use of effective task strategies, a belief of one's ability to improve, a preference for challenging tasks, and

feelings of satisfaction when effort leads to personal success. Intrinsic motivation is associated with activities that are their own reward. They occur when one has passion for performing a task. They involve freely choosing to perform a task for the pleasure of it. Autonomy, which is considered to be a sense of internal self-control of one's capability, is a requirement for intrinsic motivation. Outcomes of intrinsic motivations include interest in learning, positive attitudes towards learning, viewing errors as informational, attribution of failure to lack of effort rather than lack of ability, academic engagement and effort, perseverance in the face of challenges, risk-taking and seeking for assistance when stranded (Richler 2001, Pintrich & Schunk 2002, Begetto 2004, Carroll & Garavalia 2004). According to Carroll and Garavalia (2004), intrinsic motivations are developed early in childhood and children who perceive themselves as being academically competent generally develop mastery goal orientations.

Extrinsic oriented goals focus on social approval and reinforcement as the main criterion for judging success (Pintrich 1999). In the absence of internal control, one is externally controlled. This leads to extrinsic motivation. Extrinsic motivation results from assigned goals which are placed on one by others. It occurs when one performs a task because of an external force such as money, reward or punishment or because of an internal force such as the value system, belief, guilt and ego gratification (Carroll & Garavalia 2004). Pintrich (1999) considers extrinsic goal orientations to be involved in judging success according to how good a grade is and the pleasing of others, especially teachers and parents. According to Carroll and Garavalia (2004), children with low perceived ability are likely to develop extrinsic goal orientations. Performance goals orientations are important to extrinsic motivations. Performance-approach goals, which

focus on attaining favourable judgment of competence relative to others and performance-avoidance goals, which focus on avoiding unfavourable judgments are concepts related to performance goal orientations (Harackiewicz *et al.*, 2002).

Students with performance-approach goals focus more on achievement behaviours for the purpose of demonstrating their ability. They aim at proving to others that they are the best and obtaining recognition. They defined competence in relation to others (Pintrich & Schunk 2002, Begetto 2004). On the other hand, students with performance-avoidance goals focus on avoiding ridicule and are more concerned with protecting their self-worth at all costs. These students are more likely to engage in activities such as cheating, avoiding help when they needed it and withdrawing efforts. They are more likely to view errors as indicators of lack of ability. These students experience high levels of anxiety, they exert less effort, place less value on tasks, give up when faced with difficulties. They demonstrate lower levels of achievement (Pintrich & Schunk 2002, Begetto 2004). Therefore, it is inevitable to point out at this point that both levels of anxiety and value systems should be considered as components of goal orientations.

University students experience more of extrinsic than intrinsic motivation. Extrinsic motivations have short-term results that are not sustainable in the long run (Johnson 1999). High quality learning is associated with intrinsic motivation, and fully internalized extrinsic motivation, which includes the performance-approach goals (Begetto 2004). Schunk (1995) considers extrinsic goal orientations to be potentially able to exert powerful motivational effects. He further points out that intrinsic goal orientation enhances both self-efficacy and self-regulation. Extrinsic motivations that have not been internalized have a negative effect on students' learning (Driscoll 2005, 2005). According

to Carroll and Garavalia (2004), children with low-perceived ability are likely to develop extrinsic motivation and focus more on social approval and reinforcement. Two extrinsic motivations that are not internalised and exist in students, especially at the adolescence age, are approval from peer and parents.

According to Bogenschneider (1997), parental involvement and approval from peer are potential predictors of school success regardless of ethnicity, parental education, family structure or gender. For success in higher education, there is need for adolescents to have a balance between approval from peers and parental involvements in their lives. Both mastery and performance goal orientations influence academic performance. Studies have shown mastery goal orientations to positively impact on the academic performance of undergraduate students (Carroll & Garavalia 2004, Yip & Chung 2005). However, there are indications of no significant effects of mastery goal orientation on academic performance (Harackiewicz *et al.*, 2002).

Harackiewicz *et al.,* however, considers mastery goals as depicting interest and enjoyment in class. On the other hand, performance-approach goals are observed to have positive effects on academic performance (Harackiewicz *et al.*,2002), while performance-avoidance goals are depicted as having negative effects on interest and academic performance (Harackiewicz *et al.,* 2002). While mastery goal orientations increase interest, interest on its own would not result in academic performance. There is need for a combination of both mastery and performance-approach goals to be able to yield favourable academic results (Eppler *et al.,* 2000, Harackiewicz *et al.,* 2002). According to Harackiewicz *et al.,* (2002), mastery-oriented goals appear to play an important role in promoting optimal motivation by fostering initial and continued interest in course work,

while performance-approach goals promote optimal motivation by fostering academic achievement in undergraduate courses. Therefore, the presence of one goal orientation should not be mistaken to be the absence of the other, as it is possible for an individual to operate with both intrinsic and extrinsic goal orientations.

Interactive effects have been observed between goal orientations and other variables that are associated to academic performance. Female students are more likely than their male counterparts to adopt mastery goal orientations (Harackiewicz *et al.*, 2002). Harackiewicz *et al.*, (2002) also regards students high in competitiveness as being more likely to adopt performance goals than mastery goals. Older non-traditional students are also found to be more likely to adopt higher mastery goal orientations and lower performance orientation goals than their younger traditional counterparts (Eppler *et al.*, 2000).

It is therefore important to recognize the contributions made by goals to the academic performance of students. However, goals are considered to be effective in impacting on academic performance only when accompanied by appropriate learning and motivational strategies (Carroll & Garavalia 2004). Smith (2001) considers self-efficacy, attributions and goal orientations to be most important motivations determining self-regulatory learning strategies and thus academic performance. The next session will look at the effect of learning strategies on academic performance.

2.6. Finances and academic performance

Very successful students see their financial status more optimistically and are more confident with regard to their financial situation (Frischenschlager *et al.*, 2005:61). Rolfe,

Ringland, & Pearson, (2004) found that most of the medical students experience stress, but they found a difference in stressors between students who entered medical school after secondary school versus students who enter with a tertiary education background. The last group experience concerns about balancing their commitments, financial stress and lack of leisure time. The secondary graduates experience stress because of doubts about being a doctor (Rolfe *et al.*, 2004:782).

2.7. Self-regulatory learning strategies and academic performance

The learning strategies that people employ with a view of getting a desired outcome are critical to motivation. Strategies that impact on academic performance include self-observing, self-judging, self-testing, self-reacting, self-evaluating, monitoring, goal setting, strategic planning and strategy implementation (Tuckman 1999, Locke & Latham 2002, Yip & Chung 2005, Isaacson & Fujita 2006), all of which can be considered to be self-regulatory learning strategies.

Zimmerman (2000) defined self-regulation as the systematic effort to direct thought, feelings and actions towards the attainment of one's goals. While Pintrich (1999) defines self-regulated learning as the strategies that students employ to regulate their cognition and to control their learning. According to Schunk (2001) self-regulatory learning results from students' self-generated thoughts and behaviours that are systematically oriented towards attaining learning goals. Smith (2001) reiterates Zimmerman's observation that self-regulatory learning is fundamental to lifelong learning and that it is a process in which the learner exercises control over his or her thinking, effects and behaviours as one acquires knowledge and skills.

Self-regulatory learning strategies assume students to be active rather than passive recipients of information, thus exercising control over their goal attainments (Schunk 2001). According to Smith (2001), self-regulated learners have clearly defined goals; they determine what they need to master and control their learning environment by reducing distractions; they ensure that they put their learning plans to action, seeking help where necessary, monitoring their progress and evaluating their progress towards the learning goal; they then make the necessary adjustments to their cognition and regulatory learning strategies until they attain their learning goals. The latter observation is further alluded to by Isaacson and Fujita (2006) who pointed out that, students skilful at academic self-regulation also understand their strengths and weaknesses as learners as well as the demands of their tasks. They approach learning with a variety of strategies that may apply to their goals and they understand when and how to implement their plans. These students also know whether or not they have mastered the required academic tasks.

According to Chen (2002), the categories of self-regulatory learning strategies are:

1. Metacognitive self-regulation, which includes planning, monitoring and regulating activities (Pintrich 1999). Smith (2001) considers metacognitive regulation to be a key component of self-regulation. She defines metacognitive awareness as the conscious selection and use of learning and critical thinking strategies. According to Chen (2002), planning involves setting educational goals and outcomes. He considers analysing tasks while self-monitoring to help students focus their attention and discriminate between effective and ineffective performance thus revealing inadequate learning strategies. The latter observation is further supported by Isaacson and Fujita (2006) who found metacognitive knowledge

monitoring, which is related to self-regulatory learning strategies, to also relate to academic success.

2. Regulation of physical and social environments, which includes study environment management and help seeking respectively. Smith (2001) refers to the regulation of physical and social environments as resourcefulness. Resourcefulness is considered as the control and management of one's physical surroundings for the optimization of performance and social resources, which include teachers, peers and other adults (Smith 2001, Pintrich 1999). According to Chen (2002), managing one's study area requires locating a place that is quiet and relatively free of visual and auditory distractions so that one can concentrate. He also considers the seeking of academic support to be a valuable self-regulating, proactive learning strategy in addition to providing social interaction that is healthy for students. Both the academic support seeking and peer learning can therefore be considered to be dimensions of managing one's social environment. Support seeking involves going out of one's way to seek assistance in a course (Aleven, Stahl, Schworm, Fischer & Wallace 2003). Peer learning, on the other hand, is also referred to as collaborative learning. It involves learning in groups rather than alone (Soller 2001). According to Soller (2001), collaborative learning encourages students to ask questions, justify their opinions, articulate their reasoning and reflect upon their knowledge.
3. Time management, which includes the scheduling, planning and managing of one's study time. Smith (2001) and Pintrich (1999) considered time management to be an aspect of physical resource management.

4. Effort regulation, which is the tendency of one to maintain focus and effort towards a goal despite potential distraction. According to Alderman (1999), effort regulation can be used to build learning skills gradually and to help students handle many distractions in and outside of school. Thus, even with the stresses of life, a student with excellent effort regulation skills would be expected to excel in his/her studies.

Although Chen (2002) suggests the latter categories of self-regulatory learning strategies, the instrument for his study categorized learning strategies as cognitive and metacognitive measures and the resource management strategies as found in the Motivated Strategies for Learning Questionnaire (MSLQ) of the National Centre for Research to Improve Postsecondary Teaching and Learning that was constructed by Pintrich, Smith, Gracia, & McKaechie (1991). The resource management strategies were sub-divided into time and study environment, effort regulation, peer learning and help seeking. The instrument used by Chen (2002) was in support of Pintrich (1999)'s model of self-regulatory learning strategies, which describes the general categories of self-regulatory learning strategies as:

1. Cognitive learning strategies, of which rehearsal, elaboration and organization strategies are of great importance.
2. Metacognitive and self-regulatory strategies, which involves planning activities, which includes setting goals; monitoring thinking and academic behaviour and regulating strategies for the enhancement of academic performance.

3. Resource management strategies, which involve the management and control of one's time, effort, study environment and people including teachers and peers.

Self-regulatory learning strategies are found to enhance the academic performance of undergraduate students (Tuckman 1999, Ofori & Charlton 2002, Chen 2002, McKenzie, *et al.*, 2004, Zeegers 2004, Yip & Chung 2005). Yip and Chung (2005) observe significant differences between the study aids and self-test strategies employed by high academic achievers in the matriculation period and those employed by undergraduate students in the university. Yip and Chung (2005) attribute these differences to the objectives of university education, which emphasize the need for students to build good learning attitudes, and to reflect and think of the knowledge they obtain. Critical and independent thinking is therefore more vital than merely receiving information at the tertiary level of education. Ofori and Charlton's (2002) path model of factors influencing the academic performance of nursing students depicts the seeking of academic support as positively impacting academic performance. They observe high achievers to use more self-regulatory strategies, to control their physical environment in order to meet their needs, to seek for help when needed and to use appropriate time management skills.

Cobb (2003) also identifies time and study environment management as variables positively accounting for variance in the academic performance of undergraduate students taking web-based courses. According to Yip and Chung (2005), study strategies that include behaviours of the kind of, information organization and time scheduling contribute to academic performance. Students who experience repeated academic failure often use self-handicapping strategies such as procrastination or deliberately not trying, so as to convey the idea that the tasks, rather than lack of ability, are the reasons for low academic

performance (Midgely & Urdan 1995). McKenzie *et al.,* (2004) observe students who manage their time effectively, those who regulate the amount of effort they expend on tasks, those who self-monitor their comprehension, those who draw linkages between their reading and lecture materials and those who effectively organize their course materials to perform much better than those who do not. Negative relationships were however observed between peer learning and academic performance in a lecture type of learning environment (Ofori & Charlton 2002).

Various results have been obtained from studies seeking to explain the effects of learning strategies on the academic performance of undergraduate students. A positive relation is observed between self-efficacy and self-regulation strategies, both of which positively relate to academic performance (Pintrich 1999). Tuckman (1999) observes goal setting strategies to yield best results on low self-efficacy students, group outcome strategies to yield best results on middle self-efficacy students and non-induced strategies to yield the best results on high-self-efficacy students. Tuckman's study reveals an interactive effect between learning strategies and self-efficacy. The latter study is further supported by Schunk (2001) who considers self-regulatory learning strategies to contribute to self-efficacy beliefs.

According to Schunk (2001), indicators of success, as a result of employing self-regulatory learning strategies, communicate to the students that they are capable of performing well, thus enhancing the students' level of self-efficacy. Zeegers (2004) identifies self-regulatory learning strategies as having indirect effects on the academic performance of third year students when mediated through self-efficacy. Pintrich (1999) considers the adoption of intrinsic rather than extrinsic goal orientations, self-efficacy and

task value beliefs to facilitate self-regulatory learning strategies. Pintrich (1999) perceives extrinsic goal orientations as hindrances to self-regulatory learning strategies. Carroll and Gravalia (2004) observe self-efficacy, which is an attitude of self's competence, to influence academic performance when mediated through choice of activities, amount of effort and level of persistence, all of which are components of self-regulatory learning strategies.

According to Stone (2000), self-efficacy leads to the implementation of self-regulatory learning strategies, which further result in academic achievement. Ofori and Charltons (2002) also reveal support seeking, which is also a component of self-regulatory learning strategies to mediate between internal locus of control, which is an attitude of internal control beliefs, and academic performance. Self-regulatory learning strategies are also found to mediate between goal orientations (Carroll & Gravalia 2004, Erez 2005), learning approaches (Richardson 1998, Zeegers 2004), agreeableness and conscientiousness personality traits (McKenzie *et al.*, 2004) and the academic performance of undergraduate students in the university.

According to McKenzie, Gow and Schweitzer (2004) factors that influence learning strategies include conscientiousness, valuing of tasks, internal locus of control, extrinsic performance goals and intrinsic mastery goals. Pintrich (1999) observes strong positive relations between mastery goals and the use of cognitive and other self-regulatory strategies of learning. He also observes negative relations between extrinsic goal orientations and the use of cognitive and other self-regulatory learning strategies. In essence, both self-efficacy and self-regulatory learning strategies appear to influence each other. While self-efficacy is shown through previous studies to have an influence on goal

orientations, goal orientations in turn influence learning strategies, which in turn influence academic performance.

According to Schunk (2001), self-regulatory learning strategies only influence self-efficacy after the performance results are attained and not before. Thus, self-regulatory learning strategies contribute to academic performance, which in turn contribute to self-efficacy, which in turn influences goal orientations, which in turn influence self-regulatory learning strategies and the cycle is repeated.

2.8. Learning approaches and academic performance

Learning approaches refer to the processes of obtaining knowledge and skills by means of studying, instruction and experience, prior to the outcome of learning (Cilliers & Sternberg 2001, Fourie 2003). Fourie (2003) adopts two main learning approaches, which are given extensive attention by Biggs, Kember and Leung (2001). They are namely deep and surface approaches to learning. Other approaches identified include the achieving approach (Leung *et al.*, 2006), strategic approach and apathetic approach (Cassidy & Eachus 2000). The achieving approach involves maximizing the chances of obtaining good grades. Thus, depending on what engagements result in optimal results, students would adopt the most appropriate approach.

Zeegers (2002) considers the achieving approach to be a component of the deep approach to learning. On the other hand, the strategic approach refers to the study organization; time management; alertness to assessment demands; and intention to excel, all of which are related to motivation and specifically, the self-regulatory learning

strategies. The apathetic approach relates to a lack of direction and interest, both of which are also associated to the self-regulatory learning strategies.

Deep approaches to learning refer to the intention to understand related ideas, which relates to intrinsic motivation; the use of evidence; and involvement in active learning, the latter two being inclined to cognitive learning strategies (Cassidy & Eachus 2000, Fourie 2003). Students who adopt a deep approach to learning are actively interested in the learning material (Fourie 2003), which Pintrich (1999) considers to be the indicative of the use of cognitive learning strategies. According to Fourie (2003), the latter students base their conclusions on evidence and rational arguments and have intrinsic motives. On the other hand, surface approaches to learning refer to intentions to reproduce information, involvement in passive learning and fear of failure (Cassidy & Eachus 2000, Fourie 2003).

Students who adopt a surface approach to learning perceive tasks as externally influenced, which relates to external locus of control beliefs (Cassidy & Eachus 2000). Fourie (2003) also consider the latter students to seek to meet the demands of tasks with minimal effort and to tend to be unreflective on the purpose or strategies of learning. Therefore, the learning approaches appear to encompass the locus of control, goal orientations and learning strategies, all of which have been reviewed in previous sections.

Deep learning approaches rather than surface learning approaches are advocated for in tertiary education. The European Commission (2000) observes a paradigm shift in higher education from the traditional passive forms of learning to active learning, which is facilitated by electronically based information and includes diverse teaching methods and aids. This shift results in the facilitation of self-directed learning rather than the direct

transmitting of knowledge. According to Fourie (2003), over the past two decades, there has been a move towards teaching methods that promote deep rather than surface approaches to learning. Fourie (2003) attributes this shift to the fact that students who adopt deep approaches to learning are considered to have better and desirable qualities of learning outcomes than those who adopt a surface approach to learning. Fourie (2003), however pointed out that the students' approaches to learning are still undervalued in many higher institutions of learning. According to him, it is assumed that students who enter universities have already learned how to study and are employing appropriate study approaches in their education.

A study carried out by Fourie (2003) to establish the learning approaches adopted by Construction Engineering students in Hong Kong and Mainland China, using the Biggs' Study Process (SPQ), reveals that students from Hong Kong adopt more of surface approaches to learning while those from the Mainland China adopt more of the deep approaches to learning. This is an indication that even though deep approaches to learning are considered to be of great importance in tertiary education, they are not necessarily employed and encouraged.

One way of assessing the impact of the learning approaches on higher education is by observing their impact on academic performance. Various studies have depicted surface approach to have a more significant effect on academic performance than the deep approach to learning (Cassidy & Eachus 2000, Fourie 2003, Zeegers 2004). The observed significant effects of surface approach on academic performance are all negative while those of deep approach are either positive (Zeeger 2004) or in some cases, not there at all (Cassidy & Eachus 2000, Fourie 2003). According to Fourie (2003), the adoption of the

surface approach increases from one year of study to the next, however, it is likely that students employ less of deep approaches to their learning as they progress through their university education. Fourie (2003) provides several explanations to why students would employ fewer deep approaches as they progress in their studies. They include time management, workload, assessment and teaching approaches.

According to Fourie (2003), effective time management is of great importance to academic performance. Managing of time, workload and learning can be challenging for students fresh from high school, those who are working and those who have been out of school for a while. Without good management of time, students can be forced to adopt a surface approach to learning in order to be able to cope with the ever-increasing amount of work. In addition, Fourie (2003) reports on evidence of positive correlations between work-overload and memorizing and between demanding courses and bad teaching and poor performance on examinations. According to McKenzie *et al.*, (2004) students with heavy workloads and restricted time to complete their work tend to adopt strategies that are needed for high achievement rather than those needed for deep understanding of the material.

Perception of assessment is reported to possibly be the most significant influence on the students' learning approaches. According to Fourie (2003), assessments that encourage reproductive forms of learning lead more to the adoption of surface approaches to learning rather than deep approaches. McKenzie *et al.*, (2004) also observe the nature of assessment to have an influence on the relationship between goals and strategies, both of which are composites of learning strategies.

The quality of teaching and the attitude of teachers also influence students in their choices of approaches to learning. According to Fourie (2003), good teaching should encourage deep approach to learning. Gravett and Geyser (2004) consider teaching approaches that engage students rather than those in which the learners are least involved in the learning process to encourage students to adopt a deep approach to learning, by which students seek to understand the content. They consider the deep approach to learning to result in high quality of the learning outcomes. Cilliers and Sternberg (2001) also advocate for students to be exposed to a wide variety of methods such as group work, projects and role-play, which would optimize their learning. According to Fourie (2003), students are not being challenged enough to develop their abilities to reason independently. Fourie (2003) deems it necessary to discourage rote-learning approaches in academic work at the tertiary levels of education.

Interactive effects have been found between learning approaches and other variables that are associated with academic performance. Adult learners are observed to be more likely to exhibit the deep approaches to learning than their younger counterparts who are direct from high schools (Richardson 1998, Zeegers 2004). The younger students exhibit more of the surface approaches to learning, which are more focused on reproduction of information and which do not necessarily seek to gain insight into the material to be learned (Richardson 1998, Zeegers 2004). Deep approaches to learning are observed to reduce as students' progress from one year of study to the next (Fourie 2003, Zeegers 2004). Deep approaches to learning are positively correlated with self-efficacy (Cassidy & Eachus 2000, Zeegers 2004), internal locus of control (Cassidy & Eachus

2000), English proficiency (Zeegers 2004) and good self-regulation learning strategies (Zeegers 2004).

On the other hand, surface approaches to learning positively correlate with test anxiety (Zeegers 2004), external locus of control (Cassidy & Eachus 2000) and poor self-regulatory learning strategies (Zeegers 2004). A study carried out by Zhang (2003), reveals a significant relationship between personality and learning approaches. According to Zhang (2003) conscientiousness and openness-to experience are good predictors of the deep approach to learning, while neuroticism is a good predictor of the surface approach to learning.

Smith (2001) also observed a very close association between the learning strategies and learning approaches. In fact, learning approaches incorporate learning strategies in addition to other motivation indicators. Therefore, learning approaches cannot be separated from attitudes, goal orientations and learning strategies, they are reflections of the latter three motivation factors.

2.9. Personality and academic performance

Personality traits are identified as contributors to academic performance (Eeden *et al.*, 2001, McKenzie *et al.*, 2004). Personality traits are categorized in several ways. However, McKenzie *et al.*, (2004) consider the Eysenckian model and the five-factor model of personality to be the most established personality taxonomies. The Eysenckian model, which seeks to explain personality traits based on *why people differ*, provides three basic dimensions of personalities, namely, psychoticism, extraversion and neuroticism. Conversely, the five-factor model seeks to describe *how people differ*. The five-factor

model provides five basic dimensions of personalities, namely, extraversion, neuroticism, agreeableness, conscientiousness and openness-to-experience.

According to Buchanan (2001), extraversion reflected one's preference for particular social situations. People high in extraversion are considered to be energetic and seek out for the company of others. The agreeableness trait is considered to reflect people's tendency to interact with others. Those high on agreeableness are found to be trusting, friendly and cooperative. On the other hand, people high on conscientiousness are observed to be organized and persistent in pursuing goals. Buchanan (2001) further considers neuroticism to reflect one's tendency to experience negative thoughts and feelings and to be prone to insecurity and emotional distress. He however considers openness-to-experience to reflect open-mindedness, imaginativeness, creativity and the seeking out for cultural and educational experiences.

The dimensions of personality traits are found to influence academic performance in varying ways. McKenzie *et al.*, (2004)'s study, using the five-factor model, identifies openness-to-experience and neuroticism as factors that have no impact on the academic performance of undergraduate students in their first semester in the university. On the other hand, introversion, which is on the opposite side of the continuum of extraversion, and agreeableness are depicted as being important predictors of academic performance in the first semester of study.

According to McKenzie *et al.*, (2004), introverts are less socially preoccupied, concentrate more and are more organized than extroverts, all of which are characteristics that enhance their academic performance. McKenzie *et al.*, (2004) also observed students

who exhibit high levels of agreeableness to adjust quickly to new academic environments, to accept and hence complete the requirements of their courses on time and to be less likely to antagonize their lecturers, all of which may influence their academic performance in the first semester of study. Conscientiousness is however observed to indirectly relate to academic performance during the students' first semester of study when mediated through the self-regulatory learning strategies. It is identified as the most important predictor of learning strategies used.

According to McKenzie *et al.*, (2004), high scores on conscientiousness reflect self-control, purposeful and reliable behaviour and strong will power. It is therefore not surprising that conscientiousness would closely relate to good self-regulatory learning strategies, and more specifically, to resource management.

McKenzie *et al.*, (2004)'s study was mainly carried out among first year students. However, Zhang (2003)'s study carried out among 14 to 16-year-old secondary school students using the Eysenckian model, reveals negative impacts of extraversion and psychoticism on academic performance and none with neuroticism. The two studies appear to agree that neuroticism has no significant effect on academic performance and that extraversion negatively impacts on academic performance. Does this therefore imply that similar results are expected with older students and students in higher tertiary years? It is of interest in this study to establish whether similar results would be obtained with older students and students in higher years of study in the university.

Summary

The literature review gives light to the hypothesis (section 1.5). That is, there is a relationship between academic background and academic performance of undergraduate students, the family setup is related to academic performance and that preferred learning methods have an effect on academic results. This research would therefore aim to statistically prove the relationship between these variables, academic background, family setup, preferred learning methods and university support system with reference to Hage Geingob Medical Campus.

CHAPTER THREE: RESEARCH METHODS

3.0 Introduction

The term methodology refers to a systematic, theoretical analysis of the methods applied to a field of study. The research methodology employed a quantitative technique which in the case of this study was the method and principle applied in the research process.

3.1 Rationale of the Methodology

This study used quantitative research methods to investigate the factors affecting student academic performance at the University of Namibia, Hage Geingob Campus, School of Medicine and School of Pharmacy. The quantitative research approach made use of quantitative surveys through questionnaires. The research participants in the study were both School of Medicine and School of Pharmacy final year students at the Hage Geingob Campus, University of Namibia.

3.2 Research design

This study utilized a cross-sectional survey design and was conducted by administering a questionnaire to students enrolled as 4th year Pharmacy students and 6th year Medical students at the University of Namibia, Hage Geingob Campus. A non-probabilistic convenience sampling procedure was used. Participation in the study was voluntary with consciousness of the protection of human subjects. The study was intended to investigate the relationship between academic background, family setup, preferred learning methods and university support system. On academic performance.

The figures were entered into the statistical software packages: SPSS version 22 and Microsoft excel for analysis. The relationships between the variables and the academic performance was

then determined. The variables measured were; VARKR questionnaires discussed in the literature review. The study took the quantitative approach because it was based on variables measured with numbers and analyzed with statistical procedures.

3.3. Population and sample size

The population of interest in this study consisted of all final year students currently enrolled at the University of Namibia, Hage Geingob Campus School Of medicine and School of Pharmacy. That was both 4th year Pharmacy students with a population of 20 and Medicine 6th year students with a population of 70. Hence the target population was 90 students.

3.4 Sample Size and Sampling Technique

The sample size was calculated using the following formula by Yamane (1967). Simple random sampling was used to eliminate the possibilities of being bias and to create an equal chance for each undergraduate of being selected. The 4th year Pharmacy students 20 respondents participated and Medicine 6th year students 60 respondents participated. The sample size consisted of 80 respondents with all 80 questionnaires correctly filled in.

3.5. Research instruments

The main research instrument that was used in this study was the questionnaire. The content of the questions was reviewed and all queries were dealt with before handing the questionnaires out to the participants. The questionnaires were prepared in such a way that they did not disclose the participant's identity so as to enable them to give information freely. Even though a form of purposive sampling was employed so as to incorporate both good performing and poor performing students, the students participated voluntarily. The questionnaire format

was designed using the Likert scale model and checklist format. These are universally accepted scientific models for construction of questions to elicit data.

3.6. Administration of the Questionnaire

The questionnaires were handed to individual respondents while they were busy with their registration, hospital rotations, block teaching and classes by the researcher. Face to face administration of questionnaires assists in clarifying questions for the respondents, while also ensuring that the questionnaires are completed in full, Ethical issues of participants' rights, privacy and confidentiality of information were emphasised to the respondents during the data collection process.

3.7. Data Collection Procedure

The questionnaires were collected personally from respondents. All questionnaires collected were thoroughly checked to ensure that all questions had been answered. On the questionnaire, explanations were given to make it easier for respondents to understand the questions and ensure a 100% response rate. Information such as former schools, parent's level of education and income, enthusiasm and age of student was collected and obtained in the form of questionnaires with the object of gathering information about the students; former schools, parent's level of education and income, enthusiasm, age of student, learning preferences and class attendance.

3.8. Data analysis

Data was analysed using frequency tables and measures of descriptive statistics; frequency distribution, percentages, means, and standard deviations (Mlambo, 2012). The independent variables were analysed using analysis of variance (ANOVA) procedure of

Statistical Package for Social Sciences (SPSS) Version 22 and Pearson's chi-square test was employed to assess their nominal interactions (gender and learning styles, gender and entry qualifications, age and learning styles, and age and entry qualifications) and interpreted using Cramer's V score.

3.7 Research Ethics

The data obtained from the University of Namibia, Hage Geingob Campus School of Medicine and School of Pharmacy was solely used for the purposes of this research. The students' academic results were kept confidential throughout the research and the appropriate recognition of the intellectual and operational contributions were employed. The academic purpose of the study was explained to the participants and assurance of confidentiality was provided. In addition, an ethical clearance certificate was obtained from the Research and Publications Office (RPO) in order to carry out the research at the UNAM Hage Geingob Campus School of Medicine.

3.8 Summary

This section dealt with the methodology employed in this study. The type of research and research design have been described and explained. The sampling procedure and data collection methods as well as data analysis were outlined in this section. The methods of collecting data by means of questionnaires were also clarified, and finally, the need for ethical considerations when collecting data was highlighted. The next chapter covers the Results and Discussions of the study.

CHAPTER FOUR: RESULTS AND DISCUSSIONS

4.0 Introduction

This study focused on the investigation of the factors affecting student academic performance at the University of Namibia, Hage Geingob Campus. This chapter focuses on the presentation, analysis and discussion of data collected, based on the research objectives and research questions. In the discussion of findings, a comparison of the results obtained during the study to the literature reviewed in Chapter two was also done with a view to identify similarities and departures from knowledge gained from other authors.

4.1 Objectives of the Research

The objectives of this study were as follows:

1. To investigate the effects of entry qualifications and knowledge between high school subjects and University of Namibia School of Medicine module content on study performance.
2. To investigate the influence of: environmental setting, age of the student, learning preferences, enthusiasm, parent's level of education, student's effort, high school education, and class attendance on student academic performance.

4.2 Socio-Demographic Characteristics of the study subjects

4.2.1 Gender

Table 4.1 below shows the gender distribution of the respondents.

Table 4.1: Gender distribution

Gender	Frequency	Percent (%)
Female	62	77.5
Male	18	22.5
Total	80	100

Source: Research findings

As shown in table 4.1 above 80 students participated in this study. Of the 80 participants 62 (77.5%) were female and 18 (22.5) were male. This shows that there were more females than males at UNAM school of Medicine who were studying Pharmacy.

4.2.2 Age

The participants were further asked to indicate their age group they fall under and the data is presented as shown in table 4.2 below.

Table 4.2: Participants' age groups

Age	Female	Male	Total
20-22	19	2	21
23-25	35	10	45
26-28	4	4	8
29-31	3	2	5
32+	1	0	1
Total	62	18	**80**

Source: Research findings

As is indicated in table 4.2 the majority of the participants (45 out of 80) were between 23-25 age group, followed 20-22 with 21 participants and 8, 5 and 1 participants within the age group range of 26-28, 29-31 and 32+ respectively.

4.2.3 Region respondent comes from

Table 4.3. gathered information on the region where the participants originate from.

Table 4.3. Participants' region of origin

Region	Female	Male	Total
Khomas	27	7	34
Oshana	5	0	5
Ohangwena	1	0	1
Omaheke	0	1	1
Zambezi	1	0	1
Erongo	5	0	5
Hardap	1	0	1
Omusati	2	1	3
Kavango-East	3	2	5
Otjozondjupa	5	0	5
Oshikoto	6	5	11
Other (International)	3	1	4
Total	62	18	80

Source: Research findings

As shown in table 4.3, Khomas Region is the main feeder of the UNAM School of Medicine Pharmacy, with 34 students who participated in this study, followed with Oshikoto region with 11, Oshana, Erongo, Kavango East and Otjozondjupa were represented by 5 participants, 3 participants were from Omusati region, Ohangwena, Hardap, Zambezi and Omaheke regions were represented by 1 participant each. And of the 80, 4 were international students.

4.2.4 Residence

The table below 4.4. shows the mode of accommodation of the participants.

Table 4.4. Participants mode of accommodation

Mode of Accommodation	Frequency	Percent
Hostel Accommodation	30	37.5
Private Accommodation	50	62.5
Total	80	100

Source: Research findings

As shown in the table 4.4, the mode of accommodation was classified into hostel and private accommodation. Hence, the results show that 62.5% of the students used private accommodation whereas 37.5% used hostel accommodation.

4.3 Hypothesis Testing and verification

4.3.1. Factors that influenced the decision to study Medicine/Pharmacy.

Table 4.5 below shows how various factors have influenced the participants to study Medicine/Pharmacy. These factors include the influence of parents, the students dream to study medicine, parents, support decision, and the mode of secondary education. Moreover, the table tested the hypothesis through Chi-square test on a 95% significance level.

Table 4.5. Factors that influenced participants to study Medicine/Pharmacy

Characteristic	**Total (%)**	**P-value**
Decision to do Medicine/Pharmacy influenced by parent		0.739
Strongly Disagree	32 (40%)	
Disagree Somewhat	4(5%)	
Disagree Slightly	6(7.5%)	
Agree Slightly	15(18.8%)	
Somewhat	12(15%)	
Strongly agree	11(12.5%)	
Student's dream to do medicine		0.516
Strongly Disagree	2(2.5%)	
Disagree Somewhat	1(1.25%)	
Disagree Slightly	5(6.25%)	
Agree Slightly	8(10%)	
Somewhat	21(26.25)	
Strongly agree	43(53.75)	
Parents support decision		0.452
Strongly Disagree	2(2.5%)	
Agree Slightly	7(8.75%)	
Somewhat	11(12.5%)	
Strongly agree	60(75%)	
Mode of Examinations		
NSSCH		0.434
NSSCO		0.754

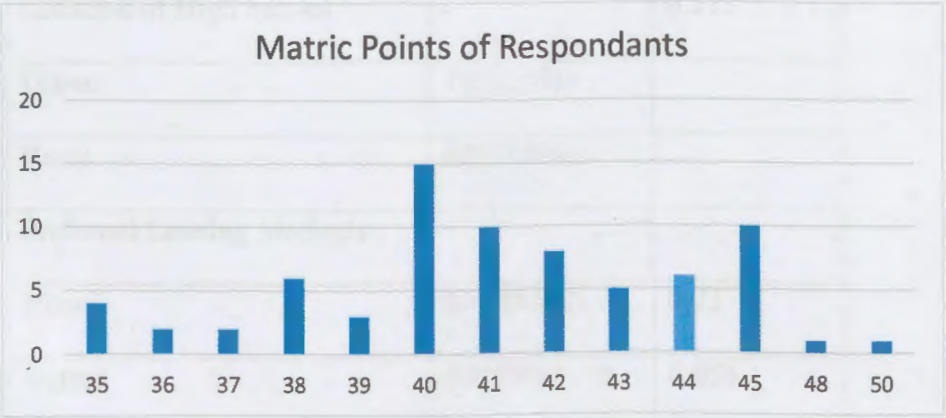
Source: Research findings

According to table 4.5, parents support decision is the most influencing factor on the students' decision with 75% strongly agreeing that it has influenced their decision. The other more influencing factor on the decision to study medicine/pharmacy is the students dream to study medicine, with 53.75% strongly agreeing with the notion and 26.25% somewhat agree. The parents have less influence on the students' decision to study medicine with 40% strongly disagree and only 12.5% who have strongly agreed. However, all the four factors were rejected by the hypothesis test on a 95% significance level as of influence to the students' academic performance.

4.3.2. Matric points of the respondents

Figure 4.1. below, show the matric points of the respondents.

Figure 4.1. Matric points of participants



Source: Research findings

Figure 4.1 shows that the mode matric points is 40 points and the majority of the respondents had 40 points or more at matric. The minimum require points for university programs in Namibia is 25 points. But however, for pharmacy and medicine, the information in the table shows that they enrol students with high points with the minimum being 35%.

4.3.3. Effects of prior educational background, preferred learning methods, and preferred assessment methods on academic performance

Table 4.6. shows effect of prior educational background, preferred learning methods, and preferred assessment methods on academic performance

Table 4.6. Effect of prior educational background, preferred learning methods, and preferred assessment methods on academic performance

Characteristic	**Total (%)**	**P-value**
English Comprehension		0.109
Good	75(93.8%)	
Fair	5(6.3%)	
Location of High School		0.511
Urban	18(22.5%)	
Rural	62(77.5%)	
Preferred Leaning Methods		
Visual	66 (82.5%)	0.73
Verbal	40 (50%)	0.056
Practical	61 (76.3%)	0.51
Logical	23 (33.8%)	0.91
Group Learning	34 (42.5%)	0.154
Self-Study	40 (50%)	0.34
Lecture	53 (66.3%)	0.696
E-Learning	15 (18.8%)	0.194

Videos	51 (63.7%)	0.229
Preferred Assessment Methods		
Multiple questions		0.51
Yes	61(76.3%)	
No	19(23.8%)	
Log Books		0.652
Yes	25(31.3%)	
No	55(68.8%)	
Short cases		0.019
Yes	50(62.5%)	
No	30(37.5%)	
OSCE		0.011
Yes	38(47.5%)	
No	42(52.5%)	
Others		0.443
Yes	4(5%)	
No	76(95%)	

Source: Research findings

Table 4.6 presents various factors and their effects on the academic performance of students. Firstly, it presents the effects of educational background by accessing the students' ability to write English comprehension and 93.8% indicated that their English comprehension skills are good whereas 6.3% were fair. However, the hypothesis test at a 95% significance level rejects that English comprehension has an effect on students'

academic performance (p-value is 0.109 which is > 0.05). It further assessed how the location of high school can affect the academic performance of students. It was found that 77.5% have rural school background and 22.5 studied in the urban schools. Hence, the hypothesis test on a 95% significance where p-value is at 0.511 rejects that the location of high school has an effect on the academic performance of students.

Secondly, the table presents the preferred learning methods. The results show that visual aid learning method is the most preferred learning method with 82.5% of participants in favour of this method. The other most preferred methods are practical with 76.3%, lectures with 66.3%, videos 63.7% and verbal and self-study have both 50% preference. The least preferred learning methods are E-learning with 18.8%, logical 33.8% and group learning with 42.5%. Nevertheless, the hypothesis test on a 95% significance level rejects that these factors can affect the academic performance of the students. However, verbal learning method on hypothesis test is more significant as compared to other factors with a p-value of 0,056.

The final factor to be measured in table 4.6 above is the preferred assessment method. The most preferred assessment method is multiple questions with 76.3%, followed by short cases with 62.5%, OSCE with 47.5%, log books with 31.3% and the least is other methods with only 5%. However, measuring with hypothesis test on a 95% significance level, OSCE with p-value of 0.011 and short cases with p-value 0.019 both < 0.05 are accepted that they can affect the academic performance.

4.3.4. Effects of socio-economic and environmental factors on academic performance

Table 4.6 below presents how the effects of socio-economic and environmental factors on academic performance. Included in this assessment is the family set up, financial support, access to safe water and electricity and house close to night club.

Table 4.7: Effect of socio-economic and environmental factors on academic performance

Effect of Socio-economic and Environmental factors		
Characteristic	**Total (%)**	**P-value**
Guardian		
Parents (Bio/Step)	35 (43.8%)	0.434
Grandparents	3 (3.8%)	0.198
Sibling (Bio/Step)	34 (42.5%)	0.346
Other	19 (23.8%)	0.922
Financial Support		0.076
Loan	29(36.3%)	
Effect of Water &Electricity of studies		0.811
Strongly Disagree	1(1.25%)	
Disagree Slightly	1(1.25%)	
Agree Slightly	4(5%)	
Somewhat	5(6.3%)	
Strongly agree	69(86.3%)	
House close to Night Club/Shopping Centre		0.813
Strongly Disagree	43(53.8%)	

Disagree Somewhat	5(6.3%)	
Disagree Slightly	3(3.8%)	
Agree Slightly	10(12.5%)	
Somewhat	5(6.3%)	
Strongly agree	14(17.5%)	

Source: Research findings

According to the information presented in table 4.7, parents whether biological or step have more influence on the performance of students as compared with other family members with 43.8% rating, followed with siblings whether biological/step with 42.5%. Grandparents are of less effect with only 3.8% indicated to be affected by them in their academic performance. And only 23.8% of the respondents are affected by other family members. However, the hypothesis test rejects the null hypothesis that says these factors can affect the academic performance students.

The other factor measured in this table is how access to safe water and electricity affect the academic performance of students. And according to the results presented, 86.3% of the respondents strongly agree that access to water and electricity have an effect to their academic performance.

Another factor, considered in this table is the effect financial support on the academic performance. And 36% indicated that it has and effect to their academic performance.

And finally, the study assessed if proximity to Night Club/Shopping centre will affect the students' academic performance. And the results show that 53.8% strongly disagree that that staying closer to a night club or shopping centre can affect the academic performance. And the hypothesis on a 95% also rejects that staying closer to a night club/shopping centre have an influence on the academic performance of the medicine/pharmacy students.

4.4. Discussion

The results presented above were measured with both how students rate how certain factors affect their academic performance and as well as conducting of a hypothesis test on every factor on a 95% significant level. However, hypothesis testing indicated not to be more accurate in measuring the variables probably because the 95% significant level is too high to measure variables of this nature. In this study the null hypothesis was rejected except for the two factors on the assessment methods i.e. OSCE and Case study assessment method. Therefore, the findings and discussion of the results in this study are based on the literal presentation of results.

The results started by presenting the gender for participants and it shows that there are more women compared to men who are studying medicine/pharmacy. The results agree with findings by researchers; (Chinawa *et al.*, 2013; Mushtaq, 2012; Pashler, McDaniel, Rohrer, & Bjork, 2008; Singh, Malik, & Singh, 2016), who suggests that gender has an influence on student's performance.

The study also presented the matric results of participants and it indicated that most of the students have 40 or more points at matric. This concurs with the findings of Mlambo

(2012), who noted that medical institutions among other characters focus on selecting students that possess high marks which seems to reflect the student's level of understanding of their prior knowledge. He further, argued that learning is a continuous process implying that students that possess high entry marks are most likely to well prepare for course material in comparison to students admitted based on the bare minimum qualifications. He further suggested that entry qualifications and prerequisites play a role in the academic performance of students.

The results above also indicated a significant relationship between English comprehension and academic performance. The results further concur with the views of Apam and Luguterah (2013) who disclosed that understanding the language and the level of confidence plays a role in academic performance. And as indicated above, Apam and Luguterah (2013), believe that understanding languages increases confidence levels, hence increases a student's performance.

And on the learning method, the respondents indicated their preferred learning methods. Reid, (1995) indicated that there is a significant relationship between preferred learning method and student's performance. He found that Student learning preferences influence academic performance. Kannan and Praveena, (2015) further suggested that the medium of instruction plays a pivotal role on the performance of students. Lecturers should use various methods of instruction since the preferred methods vary from student to student.

Furthermore, on the assessment methods, the learners also indicated how they want to be assessed. Using the hypothesis test case study and OSCE were accepted on the 95%

significance level. This concurs with the findings of Chinawa *et al.,* (2013) who revealed that students prefer Objective structured clinical examination (OSCE). Proponents argued that OSCEs assess the knowledge and skills of in a compartmentalised fashion and limits the exposure to actual patients (von Below *et al.,* 2008).

The results indicated a slight influence of family on students' academic performance. Apam and Luguterah (2013) found that peer groups and parental pressure is an effective contributor towards poor performance in students.

The study also examined how the physical environment and some socio-economic factors can affect academic performance and the respondents indicated that staying closer to night club or shopping centre does not affect their academic performance. However, Matengu, Likando, & Kangumu, 2014; Mlambo, 92012), contributed that academic output of institution is also dependent on the location or setting of the student. And, Manivasakan, Sethuraman, and Usha, (2016) emphases that the study environment plays a vital role in the performance of students.

Summary

This chapter presented, analysed and discussed empirical data collected through questionnaires. The results were interpreted and analysed according to their literal presentation and hypothesis testing was also done. The results were further discussed comparing them with other literature from similar empirical studies. The next chapter presents the conclusions and recommendations for the study.

CHAPTER FIVE: CONCLUSSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter summaries the findings and discussions as covered in the previous chapter and provides some recommendations. The objectives of this study were as follows:

1. To investigate the effects of entry qualifications and knowledge between high school subjects and University of Namibia School of Medicine module content on study performance.
2. To investigate influence of; environmental setting, age of the student, learning preferences, enthusiasm, parent's level of education, student's effort, high school education, and class attendance on student academic performance.

5.2. Summary of findings

The findings of the study can be summarised as follows:

- There were more female students than males who were studying pharmacy.
- Most of the students had 40 or more points at matric and the threshold points was 35 points.
- 93.8% of the respondents were good with English comprehension and it was found that it enhances confidence to students if they master the language.
- Students were influenced more to study medicine or pharmacy by the support given by parents as well as their passion for the profession.
- The majority of the respondents studied at rural schools.
- The most preferred learning methods were visuals, practical and videos.

- The most preferred assessment methods were multiple questions, case studies and OSCE.
- Parents biological/step as well as siblings biological/step have a slight influence on academic performance.
- Access to safe water and electricity have a significant impact on the performance of students.
- There is no significant association between students' performance with living in close proximity to shebeens, bars, shops or restaurants.

5.3. Conclusions

Using the literal interpretation of results, this study can conclude that there are many factors that affect medicine/pharmacy students' academic performance. These include, learning methods, student assessment methods, access to water and electricity, parents and siblings, and English comprehension. Thus, it means that the learning methods used by lectures plays a very important role in influencing students' academic performance. Also important is the assessment methods, that was also supported by the hypothesis test that shows that, OSCE and short cases methods that are considered as more influential in enhancing performance of students. Parents and siblings also play important role in enhancing the students' performance. Thus, the support students receive from their parents and siblings can a act as a drive to their academic performance. Moreover, access to electricity and safe water is also a determinant to students' academic performance. The results indicated that the majority of the students stays out of the campus thus they need electricity at home so that they can be able to study at any time. However, even though some studies indicated that the environment or location where students stay can affect

their performance, this study concluded that staying closer to a shebeen or shopping is of no effect to the academic performance of students.

5.4. Recommendations

Analysing the summary of the findings above, it is recommended for UNAM School of Medicine to concentrate more on the learning and assessment method since it is the most valuable instrument to improve students' performance as indicated by the results. Most importantly is an evaluation of the OSCE and the short cases as they are regarded as the only variables that can affect student performance.

In addition to this, the following tips can also help to improve performance:

1. **Align instructions to learning standards.**

Instructions for an assignment should always be clearly aligned to the learning target and task for mastering a learning standard if measurable learning targets are used. Likewise, one needs to align one's feedback strategies to the learning task to help students master learning targets.

2. **Include formative assessment**

Students must be able to understand quality work and be able to assess the quality of their own work. Lecturers should give students examples of quality work to students so they can compare their work to and can identify their learning gaps themselves. This helps to show where students need improvement. Students become more motivated about learning and confident in their abilities.

3. **Use the feedback loop concept**

This involves lecturers and students simultaneously collecting and analysing student learning information to determine where students are and where they need improvement.

Students' movement from one learning target to another works best when students receive feedback to help them improve. Students rely on feedback and, without it, their chance for remaining engaged learners spirals downwards.

5.5 Areas for Future Research

This study focused on examining the factors that affect students' performance of Pharmacy/Medical students at the University of Namibia School of Medicine. However, there is need to establish how students' academic performance can be enhanced, focusing more on the role of lectures and the school administration. Even though students may come from different backgrounds and different living conditions and environments, the school management and lectures should formulate methods to ensure the students' academic performance is enhanced despite their diverse backgrounds and environments.

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APPENDICES

Acknowledgment of Consent

I, Florinda Mario, am currently undertaking a research project as part of my studies towards an MBA (Management Strategy) with the Namibia Business School at the University of Namibia.

The aim of the research is to investigate student based factors influencing academic performance at the University Of Namibia School Of Medicine.

The answers you will provide in the questionnaire will be for research purposes only. Participation is completely voluntary and you may decide to withdraw from the study at any time.

As a willing participant in this research can you please sign and date your consent, can you please sign and date.

I____N/A__voluntarily agree to participate by completing the attached questionnaire and fully understand that I may withdraw at any time.

Signature_____Date. _____

Your participation in this research is greatly appreciated

Yours faithfully,

Florinda Mario

PARTICIPANT QUESTIONNAIRE

SECTION A

Please read through the questions carefully and answer the following questions as truthfully as possible, remember all information is completely anonymous and is for research purposes only.

DEMOGRAPHICS

Age:

Gender:	
Female	
Male	

Home Language:	
Oshiwambo	
Otjiherero	
Damara/Nama	
Rukwangari	
Silozi	
Afrikaans	
English	
Other (Specify):	

Understanding of English Language:

	Good	Fair	Poor
Reading			
Writing			
Speaking			

EDUCATION:

School from which matriculated:			
Year of Matriculation:			
Location of School (Rural or Urban):			
Region:			
Khomas		Otjozondjupa	
Erongo		Oshikoto	
//Kharas		Oshana	
Hardap		Ohangwena	
Omusati		Omaheke	
Kavango East		Kunene	
Kavango West		Zambezi	

Please indicate with an "x" whether you matriculated from a Public of Private school:

Public school	
Private school	

Type of Education: School Issuing Body

NSSCO	
NSSCH	
Cambridge/HIGCSE/IGCSE	
IEB	
Other(s) Indicate	

Subject marks obtained (Science related subjects)

Subjects	Level (H/O)	Symbol Obtained
Mathematics		
Physical Science		
Biology		
Chemistry		
Co-ordinated Sciences		
Life Sciences		

Non-Science Related

Subject	Level (H/O)	Symbol Obtained
English		
Afrikaans		
French		
German		
Portuguese		
Other (please indicate) _____		

UNAM Entry Minimum Requirements

Please indicate the total points obtained in 5 subjects (inclusive of English) _____

PRIOR LEARNING:

Please indicate with a "x" if you came into UNAM through any of these modes

(a)	Mature Age (Work Experience)	
(b)	Previous Qualification Obtained	

If you answered (b) indicate the Qualification Obtained _____

The following questions deal with identifying the gaps in knowledge between High School and University. Please remember that there is no right or wrong answer. Indicate your answer by circling the number in the corresponding space in the column next to the statement.

1=	*2=*	*3=*	*4=*	*5=*	*6=*
Strongly Disagree	***Disagree Somewhat***	***Disagree Slightly***	***Agree Slightly***	***Somewhat***	***Strongly agree***

Statements	**Scales**				
I believe the required entry subject (High School) equipped l me well for University year 1 (pre-clinical) modules.	2	3	4	5	6
The course content of science related subjects has a relation l to the year 1 pre-clinical modules	2	3	4	5	6

If you answered disagree or strongly disagree to any of the above questions, please indicate the gaps experienced (5 sentences or less).

_____

_____

_____

_____

_____

_____

_____

Living Circumstances

1. Which neighbourhood in Windhoek do you live in?

_____

2. Where do you reside

Hostel	
Private	

3. If private, please indicate whom do you live with?

Alone (rent, own place)	
Parents	
Caretaker (i.e. friends, family member)	
Other (please indicate) _____	

4. How many family members / people do you live with (if) at home? _____

5. Which of the following members do you live with at home? (Please mark with an X to all that apply, if more than 1 sibling/parent please mark X and number next to box)

Parents (biological/step)	
Grandparents	
Siblings (biological/step)	
Other(s) (Indicate)	

6. Who supports you financially? (please mark with an X to all that apply)

Parents	
Grandparents	
Siblings	
Bursary	
Loan	
Other(s)	

7. Please indicate family annual income (N$)

0 – 50 000		120 000 – 160 000	
60 000 – 110 000		170 000 ≥	

SECTION B

1. FAMILY RELATED FACTORS

The following questions deal with family relations and factors. Please remember that there is no right or wrong answer. Indicate your answer by circling the number in the corresponding space in the column next to the statement.

1=	*2=*	*3=*	*4=*	*5=*	*6=*
Strongly Disagree	***Disagree Somewhat***	***Disagree Slightly***	***Agree Slightly***	***Somewhat agree***	***Strongly***

Statements	**Scales**					
Having access to Water and Electricity helps me study better or improves my studies	1	2	3	4	5	6
My parents/guardians take interest in my academic Performance by reviewing my semester assessments (tests, assignments, etc.)	1	2	3	4	5	6
My house is in close proximity to a shebeen/bar/shop/ Restaurant?	1	2	3	4	5	6
It has always been my dream/passion to study Medicine/ Pharmacy	1	2	3	4	5	6
My parents(s)/guardian(s) influenced my decision to study Medicine/Pharmacy	1	2	3	4	5	6
My parent(s)/guardian(s) supported my decision to study Medicine/Pharmacy?	1	2	3	4	5	6
During my studies I/My friends have benefited from the UNAM	1	2	3	4	5	6

support system/structures (i.e. Peer counselling/Office of the Dean of Students/Lecturers/Mentorship Programme						
Emotional support from the University is vital for the completion of my qualification	1	2	3	4	5	6
The teaching and learning facilities have been very conducive for my studies?	1	2	3	4	5	6
The University should revamp/improve the lecture rooms, Dissection hall and library facilities to enable a better study environment	1	2	3	4	5	6

2. *STUDENT PERSONAL RELATED FACTORS*

The following questions deal with student personal relations. Please remember that there is no right or wrong answer. Indicate your answer by circling the number in the corresponding space in the column next to the statement.

1=	*2=*	*3=*	*4=*	*5=*	*6=*
Strongly Disagree	***Disagree Somewhat***	***Disagree Slightly***	***Agree Slightly***	***Somewhat agree***	***Strongly***

Statements	**Scales**					
I can rely on my classmates to share lecture notes/books and other study material.	1	2	3	4	5	6
We have always had study groups in class.	1	2	3	4	5	6
As a class we get along very well/friendly.	1	2	3	4	5	6

We always look out for one another.	1	2	3	4	5	6
I do not socialize/interact with my classmates.	1	2	3	4	5	6
My classmates and I are so close we are like family.	1	2	3	4	5	6
We always encourage one another to study.	1	2	3	4	5	6
I don't have a good sense of what it is I'm trying to accomplish in life.	1	2	3	4	5	6
I always submit my assignments /case studies on time.	1	2	3	4	5	6
I am never late for class/rotations/practical.	1	2	3	4	5	6
I attend to patients/community work timeously.	1	2	3	4	5	6
I am quite good at managing the many responsibilities of my daily life.	1	2	3	4	5	6
I tend to focus on one thing at a time, as I am not good at multi-tasking.	1	2	3	4	5	6
I am good at juggling my time so that I can fit everything in that needs to be done.	1	2	3	4	5	6
I find it stressful that I can't keep up with all of the things I have to do each day.	1	2	3	4	5	6

Lecturers/Doctors attend all lectures/teaching sessions and are always on time.	1	2	3	4	5	6
Access to resources such as internet influence my learning capabilities.	1	2	3	4	5	6
I have access to lecture notes and books prior to attending Hospital teaching sessions and lectures.	1	2	3	4	5	6

3. *TEACHING AND LEARNING STYLES RELATED FACTORS*

The following questions deal with methods of teaching and factors affecting them. Please remember that there is no right or wrong answer. Indicate your answer by circling the number in the corresponding space in the column next to the statement.

1=	*2=*	*3=*	*4=*	*5=*	*6=*
Strongly Disagree	***Disagree Somewhat***	***Disagree Slightly***	***Agree Slightly***	***Somewhat agree***	***Strongly***

Statements	**Scales**					
I am always excited to learn new things.	1	2	3	4	5	6
I am always excited about attending lecturing sessions and Hospital teaching sessions.	1	2	3	4	5	6
I am not interested in activities that will expand my horizons.	1	2	3	4	5	6

The lecturer encourages/instructs/requires we spend more time in the library studying literature on topics taught	1	2	3	4	5	6
I comprehend/understand my lecturer(s) lecturing sessions.	1	2	3	4	5	6
If I miss anything in class my lecturer is readily available and willing to assist me to catch up.	1	2	3	4	5	6

Learning Preferences

I prefer the following method of learning (you may tick more than one)

Visual	
Verbal/Linguistic	
Physical/Practical	
Logical	
Social/Group learning	
Solitary/Self-study	

My preferred medium of instruction (s). (you may tick more than one)

Lectures	
E-Learning	
Videos	
Bed-side teaching	
Rural-Attachment	
Other (s), Indicate _____ _____	

My preferred mode of assessment that help improve my learning ability. (You may tick more than one)

MCQs (Multiple Choice Questions)	
Log Books	
Short cases	
OSCEs	
Others (please indicate) _____ _____	

4. *ASSESSMENT RELATED FACTORS*

The following questions deal with assessments and the factors related. Please remember that there is no right or wrong answer. Indicate your answer by circling the number in the corresponding space in the column next to the statement.

1=	*2=*	*3=*	*4=*	*5=*	*6=*
Strongly Disagree	***Disagree Somewhat***	***Disagree Slightly***	***Agree Slightly***	***Somewhat agree***	***Strongly***

Statements	**Scales**					
The assessments (Tests/Assignments/Cases and Exams) are a good reflection of my acquired skills/knowledge.	1	2	3	4	5	6
The current methods of assessment are more than enough adequately measure my acquired skills and knowledge as a future /potential Doctor or Pharmacist.	1	2	3	4	5	6
The theoretical assessments **DO NOT** allow me time to focus on my hospital rotations/practical.	1	2	3	4	5	6

The hospital teaching method/practical **DO NOT** allow me 1 2 3 4 5 6
Time to focus on my theoretical assessments such as tests, assignments and exams.

The current mode of assessment (Multiple Choice Questions, 1 2 3 4 5 6
Case studies, Tests and Hospital Assessment Methods) are very efficient in determining my acquired skills/knowledge.

Examiner Behavior affects my academic performance. 1 2 3 4 5 6

If you answered Agree or Strongly Agree please indicate your suggestions/opinions on how the Examiners should behave (5 sentences or less)

_____

_____

_____

_____

_____

_____

THANK YOU FOR YOUR COOPERATION.