

Influence of Anxiety on Academic Performance among Students at The Technical University of Kenya

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Abstract

Academic anxiety is the fear of studying including not having good study habits and fear of failure among others. State-Trait Anxiety Inventory for Adults (STAI-AD) and Grade Point Average (GPA) were utilized to examine academic anxiety indicators derived from previous studies and their association to students' academic performance in the perspective of 357

Technical University of Kenya. The findings provide insights into increased anxiety levels correlation with student performance.

Index Terms: Academic performance, anxiety, emotionality, worry, study skill deficit.

1.1 Introduction

Cases of student unrest, dropping out, drug and substance abuse, unclear deaths and poor performance are on the rise in universities the world over. The issue becomes worse when students' academic outcome is affected. Indeed, poor academic performance has emerged a key concern of teachers, syllabus designers, curriculum developers and the whole educational body. Although there are many factors contributing to these challenges, the current study strives to create a connection amid anxiety and academic performance of students.

Mahato and Jangir (2012) define academic anxiety as a consequence or outcome of biological or emotional reactions that lower concentration level of students during learning. This current study adopts Gourav's (2015) four key scopes or dimensions of academic anxiety which include; emotionality, worry, deficits in studying skills and interference generated by duty or task. Basically, these aspects of academic anxiety have a significant bearing on the students' education outcomes, particularly post-secondary school students.

The first component of academic anxiety is emotionality that is characterized with symptoms which include distress, fright (panic), high palpitations, queasiness (nausea), moist palms, touchiness (irritability), and tenseness among others. In most cases, these are feelings emanating from the inability to perform expected duties. Specifically, such feelings are as a result of inadequate preparation or inability to comprehend learning concepts. Consequently, students undergoing these signs are likely to experience diminishing concentration levels during academic activities. Undeniably, emotionality can impact negatively on student academic performance if not attended to (Saini, 2012).

Imagined or real thoughts and feelings of something bad about to happen can be referred to as worry. This concept is operationalized in terms of low self-concept, anticipating failure, obsession with repercussions of failure, being under pressure for excellent performance, family issues among others. In most

cases, such fear of unknown distracts student from concentrating and finishing learning activities. Just like emotional reactions, students experiencing worry generated issues, have high chances of losing focus and attention to academic duties (Lena & Kent, 2012).

Study skills can be defined as student's masterly requisite studying tactics and the management of resources such as time, in order to accomplish required learning duties. Basically, these comprise combination of intellectual capabilities and procedures enhancing effectual student learning. It can also be a plan or strategy that involves choosing most applicable studying techniques. The application and effectiveness of study skills can be improved through the use of study strategies for better academic outcomes. Mazumdar, Gogoi, Buragohai and Haloi, (2013), identify four study skills that include repetitive, procedure based, cognitive and metacognitive skills.

Study skills are measured by variables such as poor time management, academic procrastination, poor organizing and processing information, motivation and attitude, inadequate instruction time, faulty learning material, over demanding syllabus as well as insensible teaching. Consequently, students rush preparing at the eleventh hour, leading to mix-up especially during examinations. As a result, students underperform due to the inability to embrace study skills. Apparently, the three dimensions of academic anxiety are outcomes of poor study skills, hence the need to design mechanisms of checking these challenges (Kader, 2016).

The concept of task-generated interference refers to unfruitful tendencies or behaviour that emerges when a student begins to engage in academic activities. Such tendencies include; making minimal effort to get things right, giving up quickly on demanding tasks, non-participation in class activities, prioritizing non-academic activities, coming late, missing lessons, and delinquent as well as aggressive character traits. Others include taking more time answering a question he or she is not capable

as well as frequently glancing at a clock face instead of responding to questions (Attri & Kumari, 2013)

Such academic anxiety tendencies appear to be more prevalent in higher learning institutions. Indeed, slipping university student's academic achievement globally is worrying. For instance, a report by Organization for Economic Cooperation and Development (OECD, 2015) on the influence of anxiety on student academic achievement in science, technology and mathematics courses among university students in Singapore. The findings showed students experiencing anxiety had more chances of having unsystematic, ambiguous and undefined goals and priorities. That led to students' inability to effectively budget and manage time. The study, observed correlation between anxiety and performance in Science Technology Engineering and Maths related courses (STEM).

A recent report by the Anxiety and Depression Association of America (American College Health Association, 2013) established that anxiety among college students in the United States had increased from 6.7% in 2000 to 12.9% in 2013. In 2014, the American College Health Association reported that 23% of college students reported anxiety as a factor affecting their functioning in the past year. Work and school performances are often domains that individuals with anxiety persistently and excessively worry about (American Psychiatric Association, 2013). The excessive worry hinders the ability to do things efficiently and in a timely manner. The time and energy that is spent worrying would leave less time to study or do homework, and negatively affect an individual in many other areas. Lowe and Ang, (2012) conducted a survey among university students in Southern Queensland University, Australia, demonstrated that untreated anxiety in young adults may lead to several behavioural, physical, and mental difficulties that impede academic performance. As if that is not enough, the findings attributed procrastination and negligence of academic obligations especially homework, assignments as well as achieving targets to heightened stress levels. Besides, the study observed that such stressed students usually cognitively think about their inadequacies, disappointments as well as personal underperforming. Consequently, their self-worth is eroded by such mind-set which results into underperformance academically.

In a more recent study on association between anxiety and student class concentration, Dalkiran, Baltaci, Karatas and Nacakci (2014) observed university student representing 40% of the total student population, visited hospitals for psychological issues, concentration challenges and stress. As well, they depicted heightened neuroticism and stress levels had correlation with dismal academic outcomes since tension affected their learning concentration, remember learned concepts and general scrawny answers to examinations.

A study done by Larson, Orr, and Warne (2016) explored both physical and mental health issues on student performance among university students in Australia. Some of the physical health difficulties the study measured included asthma, allergies, mononucleosis, strep throat, and urinary tract infections. The study found that mental health issues were significantly and negatively associated with Grade Point Averages. The study also observed that physical health issues were often correlated with mental health issues. For example, students who had high levels

of stress, or difficulties handling stress, reported physical health issues affecting their diet and sleep.

In South Africa, study skills determine performance in end of term examinations among secondary school students in Pretoria, (Ebrahimi & Khoshshima, 2014). In addition, the study found out that those students who had deficit in time management, examination preparations and notes making during learning obtained low marks in end of term examinations in contrast to their colleagues who excelled in the same tests due to having better study skills. This study confirms many findings in different studies that connect better academic performance to study skills. Further, there is clear indication that academic performance of students can be influenced by a variety of factors including academic major, self-perception of abilities, levels of anxiety during examinations and student background features.

Similarly, students experiencing anxiety issues in Malaya, exhibited poor memory, concentration loss, weak self-concept as well as weak intellectual or cognitive ability. As a result, most students displayed emotional reactions such as nervousness to difficult learning activities or general education engagements that were demanding. Overall, heightened anxiety had a bearing on their academic achievements (Prima, Muhammad, Ahmed, Tutut & Suriya, 2010).

Mohammed, Hailu, and Muhammad (2017), examined effects of examination anxiety on university students' academic performance in Northwest University, Kano, Nigeria. They established that students with heightened levels of anxiety scored lower grades compared to their counterparts who obtained higher grades with moderate levels of anxiety. It was therefore evident that academic anxiety has a bearing on the academic achievement of university students.

Additionally, the study noted that academic anxiety can no longer be ignored due to its effects on student academic performance. Academic institutions have a key role to assist students handle academic anxiety through properly executed guiding and counselling programmes. Expectedly, relationships among administration, teachers, parents and learners is meant to develop the intellectual, academic and personal aspects. Also, it should build their social and emotional faculties, as well as assisting students identify and appreciate their strengths and weaknesses.

In their study on status of university education in Kenya, Mukhwana et al, (2016), attribute worrying student indiscipline, drug abuse among others on academic anxiety that exert pressure on students. Additionally, this study found that some 35 per cent of engineering students failed at Technical University of Kenya, 30% Bachelor of Laws (LLB) of Kenyatta University, 22% Moi University, 20% University of Nairobi (Parklands Campus). Further, 5% University of Nairobi's Mombasa Campus and 2% Jomo Kenyatta University of Agriculture and Technology. Among private universities, 8% Catholic University, 6% Kabarak University, 4% Mount Kenya University and 2% Nazarene University (UNESCO, 2017).

Basically, anxiety level that is moderate and controllable is beneficial. This is because it motivates to put extra exertion to finish assignment as well as prepare for assessment. However, when the human body is unable to cope with anxiety due to extreme levels, academic anxiety turns into an issue that warrants resolution (Kaur, 2012). Admittedly, such heightened

academic anxiety levels, if not addressed, can have far reaching repercussions on students especially on academic outcomes (Lena & Kant, 2012). Sadly, students who fail to manage their anxiety levels end up missing lessons, develop social challenges, score low grades, defer learning, repeat some course units or worse get discontinued (Arul, 2013).

Expectedly, academic institutions should contribute to the total educational process directed to the development of personality of youthful students (Saket, 2014). Unfortunately, most learning institutions are unable to assist students to confront this monster of academic anxiety. Essentially, counselling inculcates academic focus and promotes healthy college life in students through mitigating against failure, drop out and wastage. Hence, efforts towards ensuring equity, retention and high completion rates have not yielded expected returns (Bala & Shaafiu, 2016).

The increasing industrial and technological developments, changes of the nation's educational system that lay more emphasis on pursuit and excellence in the academic than the emotional and other faculties of child development, have exuberated student anxiety. Further, the traditional counselling systems that provided adequate information on youth growing up issues have collapsed due to new social patterns of modernity that confine children to schools where they spend 90% of their time from early age through higher education institutions.

The Technical University of Kenya, formally Kenya Polytechnic, was upgraded to University College in 2007 before assuming full-fledged university status thereby leading to expansion in enrolment, courses and facilities. Majorly, the university focuses most courses on engineering although it has introduced arts, management and business courses to supplement its core program at undergraduate, diploma and certificate levels. Technical University of Kenya, Nairobi campus, has had reported cases of student unrest, drug abuse, promiscuity, sudden death and worrying failure in examinations.

For instance, according to Mukhwana, et al, (2016), 35% of engineering students were forced to reseat supplementary examinations due to low scores in 2016. There is also a possibility of unreported cases of student indiscipline among other unbecoming behaviour at the Technical University of Kenya. In spite of the university's laudable achievement, the country has witnessed shocking revelations of students committing suicide, dropping out of college, increased delinquent case as well as massive failure of students in key examinations (Ministry of Education, 2016).

In 2015, UNESCO raised concerns on the quality of graduates being produced by universities and colleges in Kenya. The United Nations' body observes that the country's education system is failing to produce graduates with the knowledge and

LITERATURE REVIEW

Chapter two presented the theoretical and empirical reviews; conceptual framework and summary of literature and research gaps. Basically, the materials from which information is drawn emanated from various sources. This was in line with giving the study problem in question a theoretical perspective and conceptualization that helped in guiding the study. Equally, it was meant to generate a road map for the study as well as the blueprint for interpreting the results.

skills crucial for Vision 2030, in its report dated September, 2015 (UNESCO, 2017). The UNESCO report advise bold actions be taken to restore the credibility of Kenya's universities in terms of declining performance. This is especially critical in the age of a competitive knowledge-based global economy. Kenya's true and most dependable resource is the quality of its human capital, and it cannot afford to gamble with the future of her young generation. Accordingly, increasing effects of the academic anxiety phenomenon motivated this current research.

1.2 Problem Statement

There is a general increase in the cases of failure of students in examinations, dropouts, violence, college conflicts, addiction, wrong career choices, disciplinary problems, promiscuity, attempted suicide and sudden and unclear deaths in Kenyan universities especially at the Technical University of Kenya (Mukhwana et al., 2016). Although this state could be attributed to various causes, it appears academic anxiety is at the root cause of these issues which compromise academic performance (Bala & Shaafiu, 2016). One can therefore deduce that students who experience academic anxiety are likely to underachieve academically.

From a research approach, most of the studies done in this area are in other contexts (Othieno, Okoth, Peltzer; Malla, 2014). There is little empirical evidence on the impact of academic anxiety on academic performance in the Kenyan context and only few related studies have been done (Othieno, Okoth, Peltzer; Malla, 2014). Conceptually, the researcher is not aware of any previous study on academic anxiety at the Technical University of Kenya on the study topic. Accordingly, this contextual and conceptual research gap motivated the current study on the influence of academic anxiety on academic performance among university students at the Technical University of Kenya.

1.3 Research Objectives.

The study set out to:

- (i) Demonstrate that emotionality negatively influences academic performance among university students of Technical University of Kenya.
- (ii) Expose that worrying inhibits academic performance among students of Technical University of Kenya.
- (iii) Reveal that study skills deficits have a negative impact on academic performance among students of Technical University of Kenya.
- (iv) Validate that task-generated interferences negatively influence academic performance among Students of Technical University of Kenya.

2.1.1 Influence of Worry on Academic Performance among University Students

Generally, research directly links academic anxiety to diminishing execution of responsibilities especially among students (Devine, et al, 2012). Iglesia, Stover and Liporace (2014) observed sharp dissimilarity between worry and emotionality in terms of the level each of the two-impact student academic activities. In their explanation, biological or physical reactions depict emotionality while mind based reactions show

worry. Precisely, they found out that worry reactions such as fear, have more bearing on test performance. This finding was in consistent with Suresh's (2016) observation that observed worry is more associated with lower performance than emotional reactions or responses.

Kader (2016) conducted a study on the link between worry and class attendance among middle college students in 5 diploma colleges in Jakart. An open-ended questionnaire was administered on 20 sample students through stratification in addition to use of FGDs and data was qualitatively analysed. The study established that students, who displayed worry or cognitive reactions, did not find it unusual to miss lessons. The study established that students were preoccupied with predictions of failure to the point that they were not motivated to attend classes but waited until examination time to finding ways of cheating in examinations.

While it is true the concept of worry is the independent variable for this study as in the two mentioned studies (Iglesia & Stover, year and Liporace & Kader, 2016 year), the first and second studies have tested performance and class attendance as dependent variables respectively, and they differ from that of the current study which examines worry in relation to academic performance. Still on conceptualization, while the first study used comparison between emotionality and worry on test performance, the current study examined worry and emotionality separately in relation to academic performance.

In terms methodology, Iglesia, Stover and Liporace are silent on methodology while Kader employed purely qualitative approach of open-ended questionnaire and FGD on a very small sample. The open-ended questionnaire suited anxiety as worry and emotionality were personal experiences that varied from one individual to another hence FGDs tool was not suitable as it denied participants freedom to air individual experiences. Therefore, such methodological weaknesses must have impacted on the findings of the two studies and hence might not be relied on wholesale by the current study.

Brady, Hard and Gross, (2018), in a study in Texas, USA, observed that a certain amount of anxiety could be beneficial to performance or productivity. Specifically, preliminary findings largely from laboratory discoveries submitted that moderate anxiety levels are likely to improve performance of students in mathematics. However, replicating or attaining such desirable academic outcomes in other subjects under certain daily classroom limitations or challenges, is a question worthy examining. In the effort to explain this paradox, a test to determine the influence of a slight or little anxiety entrenched or expressed in an email sent by lecturers or subject could motivate students in a preliminary or orientation university course.

To do the above, just the night prior to the first assessment or examination, first-year students got an email containing or not containing an introduction in the email meant to make them understand test or examination anxiety as useful or unharmed to better performance. As expected, students who characteristically experienced anxiety before or during testing, performed better in the test, proving that low levels of anxiety in terms of worry boosted student performance. Indeed, examination results analysis showed decreased test or examination worry motivated students to perform better in examinations among first-year students. By and large, the conceptual scope and geographical

scope, especially target population, were not very similar to the current study.

2.1.2 Influence of Emotionality on Academic Performance

Studies have revealed that emotionality influences academic performance in way or another. For instance, a study by Nadeem and Zaidi (2012), examined the effect of anxiety on overall performance of university student in the context of Bahawalpur, Pakistan. Descriptive research design was used and anxiety determining questionnaire administered on 97 students sampled using stratified sampling.

Findings of regressively analyzed data revealed that an escalation in anxiety leads to diminishing student academic achievement in students with symptoms of anxiety. However, the above study should be considered with caution because it examined anxiety generally on academic performance while the current study specifically focusses on academic anxiety on student performance. In terms of methodology, the two studies have targeted population with similar academic characteristics although the geographical scope varies greatly.

Othieno, et al. (2014), examined correlation between prevalence of academic anxiety and socio demographic and its influence on depression among university students in Kenya. It was found that anxiety, as manifested, depression-induced conditions were most prevalent students joining university for the first time especially the married, from low income households and those residing outside the university premises. Also, performance in academic, religion as well as the university or college one learned contributed significantly to increased depression levels. To that end, the study concluded that an association exists between depression and academic outcomes among university students. Therefore, proper measures are required in universities in detecting and addressing such anxiety reactions especially the most affected.

While it is appreciated that this study targets university students, the focus area of socio demographic and its influence on depression is significant. As well, the conceptual focus of this study differs from what the present study is emphasizing. Indeed, socio demographic factors are very different from academic anxiety while depression is more of a medical condition that is a sum of prolonged causes. To this end, findings of this study are related to the current study that investigated academic anxiety among students.

2.1.3 Influence of Study Skill Deficits on Academic Performance among University Students

Dalkiran, Baltaci, Karatas and Nacakci (2014) in their study established that study skills determine academic outcomes of students. They further define study skills as student's masterly requisite studying tactics and resource management such as time in order to accomplish required learning duties. Additionally, it was found out students demonstrating studying shortages like time misuse, poor notes making, preparing for tests and active participation in class, did poorly in most subjects. Admittedly, this study has immense relevance to the current study in terms of conceptuality although it is silent on method used in developing the variables. Accordingly, it contributes to the comprehension of anxiety in terms of study skills deficits and its influence on academic performance.

According to Bala and Shaafiu (2016), trained students in intellectual imagery methods and memory-aiding appliances did better than their counterparts who were never trained. Nevertheless, though trained, they are not able to utilize the skills until guided well. Further, it was revealed students with shortfalls in such study tactics, fail timetabling, adhering to timetable besides not allocating adequate time for study. In the end, such students achieve marginally overall academically. Lastly, they found out that students good at procedural type of skills make best use of time due to prudent time management, timetabling and consistently adherence to study schedules. Granted that this study equally examines the concept of study skill deficits and its impact on academic performance, brings semblance to the present study. However, sampling techniques especially small sample size of this study elicits some deficiencies and limitations to this study hence the findings might not be quite representative.

According to Grills-Taquechel, Fletcher, Vaughn and Stuebing (2012), inability to cultivate effectual study behaviour puts pressure on students, consequently increasing chances of experiencing anxiety. Typically, such students are likely to display anxiety reactions such as deferment, stalling, postponing academic tasks. Similarly, postponing academic activities or tasks, is likely to cause challenging anxiety levels linked to such procrastination or deferment. Bansal (2013), takes this theme further by offering remedies to study skills shortfalls. First, he advises that recognizing or identifying study skill shortages is instrumental towards addressing such shortfalls. Secondly, categorizing the discrepancies offered suitable intervention measures. Next step involved effort to rank these academic activities according to their importance before allocating adequately commensurate time and finally dedicatedly implementing each of them.

The study reviewed above articulates the study skill concept that forms part of the four key rudiments or dimensions that make up learning-based anxiety current study. Seemingly, the target population was same as what the current study targeted although the exact year of sampled students is not known. Conceptually, the study had some credence to guide the current study although not substantially due to difference in geographical setting. This study by Grills-Taquechel et al (2012), investigated the relationship between assessment generated anxiety and academic outcomes among university students at Northwest University in Nigeria's Kano State. Applying descriptive research design as well as recruiting 350 participants consisting of 203 and 147 male and female respectively, data was collected through EEAQ).

Relying on two hypotheses and analysing collected data with the help of correlation of the SPSS, the study observed little correlation between academic outcomes and test related anxiety. This study, therefore, suggested the need for teacher counsellors to equip students with skills of evading anxiety.

Conceptually, this study had some correlation with the current study in terms of focus area. Indeed, study skills concept was examined but in relation to examination performance. However, it could contribute in guiding the current study in terms of focus area. Although this study targeted university the same way the current study did, there are noticeable differences

in terms of analysis where EEAQ) is used as opposed to STAI used in the current study.

2.1.4 Influence of Task-generated Interference on Academic Performance among University Students

Using a meta-analysis research design on 562 studies Zirk-Sadowski, et al, (2015) investigated the association between test generated anxiety on the academic outcomes. The findings showed that test anxiety strongly impacted academic performance among students. This implies anxiety is a leading or principal factor in lowering academic performance of students. Additionally, students demonstrating heightened anxiety got lower grades as opposed to superior scores of those experiencing reduced anxiety. Fiore (2012) explored the impact of anxiety on completion of academic tasks. It was revealed that the higher the anxiety, the lower the performance reported and escalates as anxiety becomes extreme. Specifically, such students overcome by tasks being undertaken, coupled with self-degrading mind frame as being unable, eventually give up.

Both Zirk-Sadowski and Fiore, focused generally on relationship between examination generated and task completion in their studies without specifically examining the concept of task-generated interference as required by the sub-headline being examined in the current study. However, their focus areas are relevant to the entirety of the current study.

2.2 Literature Gap

Most of the studies reviewed above, have some minimal relevance to the current study conceptually and methodologically. To this end, various components of academic anxiety have been articulated to some degree but not as the current study adequately discuss them. In fact, some have either specifically discussed particular indicators of some of the four dimensions but not in relation to overall student outcomes or generally discussed anxiety. In terms of research methodology, few studies have focused on university students and there is no single study which has examined anxiety and its impact on academic outcomes among students at the Technical University. Additionally, very few studies had utilized STAI as determinant or measurement of academic anxiety. Further, some sampling issues especially small sample sizes and even in the case of large sample sizes, the features of such samples are very unique from The Technical University this current study targeted. Still, methodological issues such as sampling techniques, research designs among others characterize the studies reviewed above.

Therefore, from the above studies, the researcher did not find any published study that examined the influence of academic anxiety among university students in Kenya with special reference to The Technical University of Kenya. Besides, the inconsistencies and contradictions make these studies not conclusive in this area hence necessitating further studies in this area. A few studies above shed light on what this current study set out to achieve by reporting that increased anxiety levels had a bearing on lower academic achievement.

Like the current study's objective, annotations advanced in literature reviewed in this section, though minimal, infer an association between anxiety and academic achievement. Contextually, the current study bid to establish if this same association observed in the studies discussed here indeed occurs particularly at The Technical University of Kenya.

METHODOLOGY

3.1 Research Design

This chapter discussed research design, participants and sampling procedures, instruments of measure, data collection procedure, data analysis, and ethical issues in research. Shekhar (2014) describes research design as one that consists of road map under which collection, measurement and analysis of data is based. According to Cooper and Schindler (2014), this is a strategy or structure in which answers to the research questions are thoroughly examined and obtained. Research design entails showing the methods and procedures for collecting and analysing data into meaningful information that would yield answers to the research questions (Merriam, 2014).

The study employed a quantitative approach with the use of basic analytical techniques such as mean, standard deviation and percentages. Also utilized was correlational and regression designs to allow it draw inferences from the existing disparity between the independent and dependent variables in the present study. Correlation suited this study because it explained the relationship between academic anxiety and student academic performance. Implicitly, correlation showed the extent to which academic anxiety influences academic performance of students. On the other hand, regression analysis was used to determine the strength the relationship between academic anxiety and student academic performance (Creswell, 2013).

Accordingly, this method attempted to determine how anxiety related with academic outcomes. Indeed, this design

Table 1. Determining Sample Strata

Department	N	N	n/N*357	Strata
Mechanical	5000	1500	1500/5000*357	107
Electrical and electronic	5000	1200	1200/5000*357	85
Infrastructure and built environment	5000	900	900/5000*357	64
Architecture	5000	800	800/5000*357	57
Survey	5000	600	600/5000*357	43

Whereas; N represented the targeted population while n designated the sample size distributed across various departments in tandem with Krejci and Morgan's (1970) table for determining sample size for a known population.

Purposive sampling was used to exclusively focus on final year students. Purposive sampling method proved to be effective as only limited numbers of people served as primary data sources due to the nature of research design, aims and objectives. A purposive sample is where a researcher selects a sample based on their knowledge about the study and population (Shekhar, 2014). The researcher had chosen this method because she was clear about the informant qualifications.

3.3 Instruments of Measure

was suitable because it sought to establish the extent of association between academic anxiety and academic performance of students (Yu, Abdullah & Saat, 2014).

3.2 Sample Size and Sampling Procedures

The researcher obtained the list of 5000 final year students in the engineering faculty from the administrative office in each department. Thereafter, using Krejcie and Morgan (1970) table (Appendix iii) for determining sample of a known population, a population of 5,000 subjects having a minimum sample size of 357 students was achieved. Further, stratified sampling was used to ensure equal representation of the five departments at the university. These included Mechanical, Electrical and Electronic, Infrastructure and Built environment, Architecture and Survey department.

The sample size for each stratum was determined based on student number in the five departments. The distribution of students was as follows 1500 Mechanical School students, 1200 electrical and electronic school students, 900 infrastructures and built environment school students, 800 architecture school students and 600 survey students. The stratum for each department was calculated as shown in Table 1.

The researcher used State-Trait Anxiety Inventory for Adult (STAI-AD) to determine or measure anxiety levels in adults (Yin, 2014). This instrument was able to differentiate temporal anxiety referred to as state anxiety from long-term anxiety condition called trait anxiety. It was simple and this implicitly made it crucial for evaluating persons portraying characteristics of anxiety. It was widely adopted in many countries all over the world. This was the top determinant of anxiety in human beings ever developed (Chauhan, 2016).

The STAI has 39 items allocated to anxiety subscales comprising worry reaction, emotional reactions, study deficit skills and task-generated interferences. Range of scores for each subtest is 20–80, the higher score indicating greater anxiety. In this current study, a cut point of 39–80 has been suggested to detect clinically significant symptoms for the

anxiety for students. All items are rated on a 4-point scale (e.g., from “Almost Never” to “Almost Always”). 1) Almost

Never, 2) Somewhat Always, 3) Moderately Always, and 4) Almost Always. Higher scores indicate greater anxiety.

Table 3. Interpretation of STAI

Measure	Score	Interpretation
Almost Never	Below 20	Lowest
Somewhat Always	21-39	Low
Moderately Always	40-59	Medium/High
Almost Always	60-80	Highest

Source; Spielberger, (1966).

GPA of students is derived by calculating the average of student's total earned points divided by the total. TUK had adopted the British degree grading system with a student scoring an average mark of 80 and above was interpreted to mean high with GPA of between 2.7 and maximum 4.0, 65-79 was interpreted as moderate with a GPA of between 1.0 and 2.3 while score below 65 was interpreted as low with less than 1.0 GPA.

According to this grading system students who scored below 40% were deemed to have not qualified or satisfied the examination minimum requirements. Students were asked to indicate their individual marks and GPA which was determined through the following scale;

Table 4. Interpretation of GPA level

Letter Grade	Percent Grade	4.0 GPA Scale	Interpretation
A	93-96	4.0	High
A-	90-92	3.7	High
B+	87-89	3.3	High
B	83-86	3.0	High
B	83-86	3.0	High
B-	80-82	2.7	High
C+	77-79	2.3	Moderate
C	73-76	2.0	Moderate
C-	70-72	1.7	Moderate
D+	67-69	1.3	Moderate
D	65-66	1.0	Moderate
F	Below 65	0.0	Low

3.3.1 Interpretation of STAI and GPA level

To classify students' performance academically, the following interpretation was applied as displayed in Table 5.

Table 5. Interpretation of STAI and GPA level

<i>STAI's score</i>	<i>GPA</i>	<i>Interpretation</i>
80 > STAI	2.50 > GPA	Low
80 < STAI	2.50 < GPA	High

Source: Spielberger, (1966).

3.3.2 Reliability of (STAI-AD and GPA) Scales

This study used Cronbach's scale to determine reliability. Internal consistency ranging from 0.86 to 0.95 was deemed reliable. To optimize content validity, most items were selected from other academic anxiety measures on the basis of strong associations with others related scenario. To ensure reliability of STAI, the alpha values of the STAI in previous studies and that the study was also tested for reliability with this group. Previous studies such as Choden, (2012), Kader (2016), Sridevi (2013) Ebrahimi and Khoshshima (2014) documented reliability and validity test of 0.923, 0.898, 0.912 and 0.910 respectively.

A four-Likert scale closed-ended questionnaire covering the four constructs of anxiety and one item on academic performance which required the respondents to provide their GPA scores for the previous academic year. STAI was used to determine anxiety levels among students. Section A examined respondent's demographic features. Sections B to E of the questionnaire consisted of a test anxiety assessment in accordance with the research objectives as recommended by Yazan (2015). Section F sought to obtain the GPA of students. The researcher requested students to indicate their performance in form of GPA. Performance was measured in terms of student scores as specified in the GPA system.

The researcher first obtained an authorization for research from NACOSTI and letter from the TUK to conduct the study.

3.4 Data Collection Procedure

Research tools administering team were rigorously trained in order to avoid any errors in the data collection process and to reduce bias. The researcher sought consent from the respondents who signed the consent before participating in the study. The tools had an introductory part explaining how confidentiality was to be maintained and precise instruction on how they were to respond to the items. The questionnaires were administered by researcher and trained research team higher return rate. The study respondents were guided through the study and requested to provide required data and any clarification needed by the respondent was addressed on the spot.

3.5 Data Analysis

The returned questionnaires formed the basis for the analysis. The questionnaires were cleaned, verified, coded and tallied according to the themes. The researcher used, mean, standard deviation, percentages, correlation and regression of the SPSS application to analyse quantitative data from the questionnaires. Correlation was used to determine the

relationship between academic anxiety and student academic performance. Implicitly, correlation showed the extent to which academic anxiety influences academic performance of students. On the other hand, regression analysis was used to determine the strength the relationship between academic anxiety and student academic performance.

Descriptive statistics were presented in the forms of tabulation, diagrams, graphs and certain numerical procedures all which aim at summarizing the material in a form which display its distinctive features that aid analysis. Inferential statistics on the other hand is a branch of statistics largely concentrates on data analysing and inferring meaning (Kihn & Ihantola, 2015). The responses in the questionnaires were interpreted for analysis based on 4-point Likert scale where: 4= Almost Always; 3=Moderately Always; 2= Somewhat Always; 1= Almost Never. The researcher will employ correlation to determine influence of academic anxiety on student achievement.

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the research findings, data analysis and data presentations in form of tables, graphs and figures. The chapter also offers the interpretation of the results from the findings collected from the sampled respondents. All findings are analysed within 95% confidence level and error margin of 5%. Data analysis entails separation of data into constituent elements and examining separately in relation to the whole more than just examining what has been collected in order to make deduction and inference. Indeed, this involves scrutinizing the acquired information and making inferences. Yu, Abdullah and Saat (2014) defines data analysis as the process of ordering and restructuring data from the field in order to grasp the overall connotation as presented by research questions to illustrate the issues.

The responses in the questionnaires were interpreted for analysis based on the fundamental assumptions of a Likert scale of 1 – 4, where 4= Almost Always; 3=Moderately Always; 2= Somewhat Always; 1= Almost Never. The returned questionnaires formed the basis for the analysis presented in this chapter. The questionnaires were then

verified, coded and tallied according to the research objectives. Thereafter, they were quantitatively and qualitatively analyzed by use of SPSS (Scientific Package for Social Sciences) version 21.

What followed was presentation of findings in frequencies and percentages through the use of tables and charts. In each sub-section, responses of all categories of respondents are analysed and reported, an interpretation of the analysis is made to attach significance and offer explanations to the findings and make inferences. Correlation and regression analysis techniques were applied for verification, level as well as significance of anxiety vulnerability on student academic performance.

4.1.1 Participants’ Responses to Worry Experiences

The first objective sought to assess the impact of worry on academic performance of students at the Technical University of Kenya. Students were asked to indicate on a four-point Likert-type scale how often they experience the feeling described in each statement. The responses to worry reactions of the Anxiety Inventory are as summarized and presented in Table 6.

Table 6. Influence of Worry on Academic Tasks (n = 249)

Worry Experience Reactions		4	3	2	1	SD	M
During learning, I’m confronted with predictions of failure	F	49	166	27	7	.647	3.03
	%	19.7	66.7	10.8	2.8		
I experience self-degrading thoughts while learning	F	66	119	49	12	.840	3.00
	%	26.5	47.8	19.7	4.8		
When learning, I’m preoccupied with the consequences of doing poorly	F	61	123	57	14	.804	2.82
	%	19.3	49.4	25.7	5.6		
Parents and school place high demand and pressure for excellent results	F	61	117	57	14	.832	2.90
	%	24.5	47.0	22.9	5.6		
Family related problems preoccupy my mind while at school	F	55	134	52	8	.747	2.95
	%	20.9	53.8	20.9	3.2		

School related problems disturb while learning	F	72	113	55	9	.811	3.00
	%	28.9	45.4	22.1	3.6		
I'm always thinking of my personal problems while learning	F	75	137	29	8	.731	3.12
	%	30.1	55	11.6	3.2		

* 4= Almost Always; 3=Moderately Always; 2= Somewhat Always; 1= Almost Never. f=Frequency; SD=Standard Deviation; M=Mean

Manifestly, the statistics in Table 6, demonstrate certain worry reactions were most profound among respondents. A case in point is a disturbing 166 respondents represented by 66.7% with SD and M of .647 and 3.03 respectively indicated that during learning they are confronted with predictions of failure as a worry related reaction. A further 123 respondents represented by 49.4% with SD and M of .804 and 2.82 respectively reported that they were always preoccupied with the consequences of doing poorly as a reaction to when confronted with a difficult academic activity.

The descriptive analysis of the score obtained from the administered anxiety questionnaire revealed most students at the university experience moderate level of worry related anxiety. Likewise, 134 represented by 53.8% with SD and M of .747 and 2.95 respectively, signposted that family related problems preoccupy their mind while at school. Finally, 137 represented by 55% with SD and M of .731 and 3.12 respectively, branded thinking of their personal problems

while learning as a major response to a challenging academic endeavour.

Implicitly, over three-quarters of the students at the university reported of experiencing moderate high level of worry reactions. On the other hand, the sub-theme “school related problems” which students labelled as an impediment to their academic performance, had the lowest response of 113 represented by 45.4% with SD and M of .811 and 3.00 respectively. Comparatively, this research variable had lower prevalence among students than the other three research constructs.

4.1.2 Emotionality Experiences

To determine the level of emotionality among respondents, students were asked to rate their experiences of the various emotional reactions described in the statements in the table below. The responses to the Anxiety Inventory are summarized and presented in Table 7.

Table 7. Influence of Worry Emotionality on Academic Tasks (n = 249)

Emotionality Experience Reactions		4	3	2	1	SD	M
I always feel fast heartbeat during demanding learning activities	F	80	139	21	9	.725	3.16
	%	32.1	55.8	8.4	3.6		
I often feel nausea in class when confronted with tough situation	F	63	158	18	10	.691	3.10
	%	25.3	63.5	7.2	4.0		
I experience sweaty palms during challenging learning events	F	65	130	41	13	.798	2.99
	%	26.1	52.2	16.5	5.2		
I experience irritability when handling severe class activity	F	53	146	40	10	.732	2.97
	%	21.3	58.6	16.1	4.0		
Nervousness grips me during involving learning activities	F	76	141	22	10	.733	3.14
	%	30.5	56.6	8.8	4.0		
I experience panic during difficult academic endeavour	F	60	164	17	8	.654	3.11
	%	24.1	65.9	6.8	3.2		
I undergo stomach upset when handling problematic subject	F	58	163	19	9	.670	3.08
	%	23.3	65.5	7.6	3.6		
Fear of failure grips me when challenging academic activity approaches	F	69	153	18	9	.692	3.13
	%	27.7	61.4	7.2	3.6		

* 4= Almost Always; 3=Moderately Always; 2= Somewhat Always; 1= Almost Never. f=Frequency; SD=Standard Deviation; M=Mean

Evidently, the findings in this theme (research construct) on emotional reactions show reactions that had higher responses. To that end, 164 respondents represented by 65.9% of the respondents with a SD and M of .654 and 3.11 respectively pronounced panic condition the experience during difficult academic endeavour. Additionally, 163 represented by 65.5% with SD and M of .670 and 3.08

electively, designated stomach upset as an emotional reaction to problematic academic exercise. Finally, 153 represented by 65.5% with SD and M of .526 and 3.23 respectively, branded fear of failure as emotional comeback to a challenging academic activity. However, the emotional reaction “sweating palms during challenging learning events” received the least response of 130 respondents represented by 52.2% with SD

and M of .798 and 2.99 respectively. The interpretation is that three-quarters of the students at the university experience moderate anxiety level in terms of emotionality.

4.1.3 Participants’ Responses to study skills deficits Experiences

Study skills are instrumental in propelling students to better performance, however, a deficit of such skills, undeniably, negates performance. Therefore, the third

objective sought to determine the level of emotionality among respondents. Students were asked to rate their experiences of the various emotional reactions described in the statements and responded as shown in Table 8.

Table 8. Study Skills Deficit Experiences (n = 249)

Study skills deficits Experience attributes		4	3	2	1	SD	M
Expectation and demands impede my studying skills	F	72	131	32	13	.801	3.06
	%	28.9	52.6	12.9	5.2		
I procrastinate difficult learning activities	F	80	144	17	7	2.613	3.36
	%	32.1	57.8	6.8	2.8		
Organizing and processing Information gives me challenges	F	76	137	25	11	.756	3.12
	%	30.5	55	10.0	4.4		
I have little motivation and negative attitude towards hard subjects	F	53	174	15	7	.615	3.10
	%	22.3	69.9	6.0	2.8		
There is inadequate instruction time for most lessons	F	42	169	28	10	.666	2.98
	%	16.9	67.9	11.2	4.0		
Faulty learning material undermine my learning	F	46	175	19	9	.637	3.04
	%	18.5	70.3	7.6	3.6		
Over demanding syllabus affects my learning especially hard subjects	F	100	123	15	11	.760	3.25
	%	40.2	49.4	6.0	4.4		
Insensible teaching at TUK undermines my learning	F	57	159	24	9	.684	3.06
	%	22.9	63.9	9.6	3.6		

* 4= Almost Always; 3=Moderately Always; 2= Somewhat Always; 1= Almost Never. F=Frequency; SD=Standard Deviation; M=Mean

Tellingly, from Table 8, the following aspects or study skill deficits came out strongly as the ones most students have challenges with. For example, 174 respondents represented by 69.9% with SD and M of .615 and 3.10 respectively, intimated that they had little motivation and negative attitude towards hard learning activity. As well, 169 respondents represented by 67.9% of the respondents with a with SD and M of .666 and 2.98 respectively described instruction time for most lessons as not being adequate. Additionally, 175 represented by 70.3% with SD and M of .634 and 3.04 respectively, complained of faulty learning material as undermining their learning. Further, 159 represented by 63.9% with SD and M of .684 and 3.06 respectively, protested of insensible teaching at TUK undermines their learning. Nevertheless, “demanding syllabus affected their learning especially hard subjects”

aspect received the least response with only 123 represented by 49.4% with SD and M of .760 and 3.25 respectively. The implication is that most of the students at the university experienced moderate anxiety level due to deficit study skills at the time this study was conducted.

4.1.4 Participants’ Responses to Task-generated interferences Experiences

Task-generated interferences can adversely affect the academic outcomes of students. To that end, the fourth objective sought to assess the impact of task-generated interferences component on academic performance of student. Students were asked to indicate on a four-point Likert-type scale how often they experience the scenario described in each statement. The responses to the findings are summarized and presented in the Table 9.

Table 9. Task-generated Interferences (n = 249)

Task-generated interferences Experiences		4	3	2	1	SD	M
I sometimes make minimal effort to get things right	F	68	163	18	4	.610	3.15
	%	25.7	65.5	7.2	1.6		
I give up quickly on hard-to-get learning tasks	F	98	127	16	8	.720	3.27
	%	39.4	51.0	6.4	3.2		
I see no need to participate in difficult academic activities	F	60	161	18	10	.684	3.09
	%	24.1	64.7	7.2	4.0		
Sometimes I prioritize crucial non-academic activities	F	105	105	29	10	.807	3.22

	%	42.2	42.2	11.6	4.0		
Due to unavoidable circumstances, sometimes I report to class late	F	87	144	11	7	.668	3.25
	%	34.9	57.8	14.4	2.8		
Due to other engagements, I miss lessons sometimes	F	74	138	27	7	.715	3.14
	%	30.9	55.4	10.8	2.8		
Due to learning pressure, at times I behave delinquentlly	F	74	152	18	5	.646	3.18
	%	29.7	61.0	7.2	2.0		
Difficult learning activities forces me to exhibit aggressive behaviour in class	F	59	156	27	7	.674	3.07
	%	23.7	62.7	10.8	2.8		

* 4= Almost Always; 3=Moderately Always; 2= Somewhat Always; 1= Almost Never. F=Frequency; SD=Standard Deviation; M=Mean

Statistical evidence from Table 9, suggests a trend of profound findings in relation to task-generated interferences. For instance, that a disturbing 163 respondents represented by 65.5% with SD and M of .610 and 3.15 respectively, make minimal effort to get things right. Another outstanding finding is the response of 161 students represented by 64.7% with SD and M of .684 and 3.09 respectively, who confessed that they saw no need to participate in difficult academic activities.

In the same way, 152 represented by 61.0% with SD and M of .646 and 3.18 respectively, acknowledged behaving delinquentlly sometimes due to learning pressure. Lastly, 156 represented by 62.7% with SD and M of .674 and 3.07 respectively, admitted that difficult learning activities forced them to exhibit aggressive behaviour in class which interfered

Table 10. Students Performance Expressed in GPA (n = 249)

GPA Range	Frequency	%	Mean	SD
3.3 to 4.00	11	4.4		
2.7 to 3.2	21	8.4		
1.1 to 2.6	203	81.5		
Below 1.00	14	5.6		
Total	249	100	2.88	.552

As tabulated above, majority of the students totalling to 203 representing 81.5% of the respondents attained a GPA of between 1.1 to 2.6. Next were 21 students represented by 8.4% who scored between 2.7 to 3.2 in the GPA. The least category of performance were 11 students who obtained GPA

Table 11. Correlation between Anxiety and Students' Academic Performance

	Mean	Std. Deviation	Correlation with Students Performance in GPA	Students N
Students Performance in GPA	2.88	.552		249
Worry reactions	2.6810	.51512	.829**	249
Emotional reactions	3.0010	.59058	.900**	249
Study skills deficits	3.0356	.66867	.815**	249
Task-generated interferences	3.0813	.58494	.889**	249

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

The effect of anxiety on academic achievement was determined by finding out the coefficient of correlation between the test scores and in the last annual examination. From the results, all the factors considered had strong positive significant correlation with student's performance in GPA.

with their learning. Nonetheless, the task-generated interference, "I prioritize crucial non-academic activities", had the least responses of 105 respondents represented by 42.2% with SD and M of .741 and 3.26 respectively. From the findings above, it can be concluded that most students at the university experience task-generated interferences.

4.2 Students Academic Performance in Form of GPA

This part sought to establish the previous year's (two previous semesters) GPA of each respondent. Students were therefore asked to indicate their respective GPA for the previous academic year based on a 4-point scale where: 1= a GPA of between 3.3 to 4.00 GPA; 2= a GPA of between 2.7 to 3.2 3= a GPA of between 1.1 to 2.6; 4= a GPA of below 1.00. The findings are as summarised and presented in Table 10.

of range of 3.3 to 4.00. From the table above, most of the students represented by 68.3% scored the GPA of between 1.1 - 2.6. The overall mean and standard deviation stood at 2.88 and .552 respectively.

4.3 Correlation between Anxiety and Students' Academic Performance

All respondents' previous year, (2017) annual aggregate scores in form of GPA were listed down as part of the data collected during the data collection process. A correlation between anxiety and students' GPA was done. This correlation was conducted to see if students' performance could be predicted by worry reactions, emotional reactions, study skills deficits and task-generated interferences. The Pearson Correlation analysis was used to compute the correlation.

The coefficient of correlation between student aggregate marks (GPA) and student anxiety was established.

First, outputs showed a positive correlation between worry reactions and academic performance, $r=.829_{(249)}$, $p<.01$. Additionally, a positive relationship, $r=.900_{(249)}$, $p<.01$, was established between emotional reactions and student academic performance. Further, a positive relationship between study

skills deficits and student academic performance was established $r=.815_{(249)}$, $p<.01$. Finally, the findings reported a positive relationship of $r=.815_{(249)}$, $p<.01$ between task-generated interferences and student academic performance.

4.4 Regression Analysis

Table 12 Regression Coefficients

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	.102	.070		1.457	.146
	Worry Reactions	.056	.052	.053	1.079	.282
	Emotional Reactions	.374	.053	.400	7.005	.183
	Study skills deficits	.183	.031	.222	5.989	.156
	Task-generated interferences	.309	.047	.328	6.530	.170

Dependent Variable: Students Performance in GPA

From the statistics above, there exist positive relationship between worry reactions and academic performance ($\beta= .053$, $t= 1.079$. and P value <0.05). This implies that a unit increase in worry reactions is associated with .053 decreases in academic performance. In addition, the study findings depicted a positive significant relationship between emotional reactions and academic performance ($\beta=0.400$, $t=7.005$ and P value <0.05). This implies that a unit increase in emotional reactions is associated with 0.400 increases in academic performance. Further, the findings portrayed a positive significant relationship between study skill deficits and academic performance ($\beta=0.222$, $t=5.989$ and P value <0.05). This implies that a unit increase in study skill deficits is associated with 0.222 decreases in academic performance. Finally, results in Table 4.12 showed that there is a positive significant relationship between task-generated interferences and academic performance ($\beta=0.328$, $t=6.530$ and P value <0.05). This implies that a unit increase in task-generated interferences is associated with 0.328 increases in academic performance. Accordingly, emotional reactions, study skills deficits and task-generated interferences significantly projected respondents' performance. Nevertheless, reactions to worry did not have a significant relationship with performance of students. This regression outputs show there exists a very strong substantial connection between anxiety and academic performance.

4.5 Discussion

Essentially, this section aimed at discussing the implications of the present study as well as the relationship between the findings here and previous studies. In the first place, the study established that most students were experiencing worry related reactions such as predictions of failure, self-degrading thoughts, preoccupied with the consequences of doing poorly, demand and pressure for excellent results, family and as well as personal problems. Thus, the finding of the study was confirmatory to the previous findings of Kader (2016) who displayed cognitive reactions, did not find it unusual to miss lessons and they were preoccupied with predictions of failure to the point that they were not motivated to attend classes but waited until examination time to finding ways of cheating in examinations.

The study also established that most students were mainly affected by emotional reactions such as fast heartbeat,

In order to establish strength of association between anxiety and students' academic performance, regression technique was applied to analyse the relationship.

nausea, sweaty, irritability, nervousness, panic and stomach upset as well as fear of failure were emotional reactions to challenging academic activities. Supporting this finding, Ebrahimi, and Khoshsima, (2014), found out that emotional issues significantly impacted negatively on students' academic performance. The results of the study also showed that emotional reactions are often correlated with academic performance among students.

Likewise, the findings showed that students depicted study skill deficits such as high expectation and demands from the school and parents, poor organizing and processing information, have little motivation and negative attitude towards hard learning activity. Other study skill deficits students encounter, include inadequate instruction time for most lessons; faulty learning materials; over demanding syllabus and insensible teaching at TUK, were study skill deficits among students. This premise fits well with that of Dalkiran et al, (2014) who found out that students demonstrate studying shortages like time misuse, poor notes making, preparing for tests and active participation in class, did poorly in most subjects. The finding also echoes Brady, Hard and Gross, (2018) which showed that lack of teaching and learning resources affected student academic achievement.

Further, the study established students at the university experienced various task-generated interferences. For instance, students made minimal effort to get things right, gave up quickly on hard-to-get learning tasks and saw no need to participate in difficult academic activities. It was established students prioritized crucial non-academic activities and reported to class late. The findings showed heightened anxiety affects students' behaviour. For instance, students admitted of behaving delinquently and aggressively during learning sessions. This finding is reflected in the work of Arul, (2013) who observed that students whose characteristics of anxiety can affect students behaviourally, cognitively, and physiologically, for example, high stakes testing can be very difficult for students with anxiety and end up missing lessons, develop social challenges, score low grades, defer learning, repeat some course units or worse get discontinued. Further, this finding reinforces the finding of a study by Mohd (2014) who established that students are mostly unable to refocus their attention to the academic task as the ability to

comprehend and critically solve problems is diverted to some interfering activity.

Furthermore, findings imply most students experienced moderately high level of anxiety. This is consistent with observations made by Goff, (2011) who develops this idea further by arguing that high prevalence of mild to severe academic anxiety is present among most post-secondary students, especially the ones pursuing supposedly problematic courses. This finding is also in tandem with Aparnath, (2014) who postulates that mild or controlled anxiety levels enhances better performance while very diminished anxiety levels begets low performance.

Furthermore, the Pearson Product Moment Correlation and regression analysis found a significant correlation between anxiety and performance academically among students at the university. Implicitly, students experiencing heightened anxiety have slim chance of excelling academically. Likewise, students undergoing diminished anxiety have chances of being high academic achievers and that such a relationship cannot be attributed to chance. The results further showed that students who experienced relatively higher anxiety levels performed relatively poorer than those who did not experience high anxiety levels.

This finding is consistent with Chhanasiya and Jogsan's (2015) description of anxiety oneself physiologically, psychologically and behaviourally at a time of challenging

He further observes that although a certain amount of anxiety is required as an impetus towards positive action, an excess of the same could be detrimental to the student's well-being and may greatly contribute to low academic results. This contradicts the baseline survey report by Brady, Hard and Gross, (2018) that found the level of anxiety does not significantly one's performance in the absence of other outside factors. To them, lack of teaching and learning resources hindered good academic performance more than anxiety generated issues.

activity such as assessment moment in this case. Equally, they agreed with various studies discussed here heightened anxiety lowers academic achievement of students. Further, the findings are in tandem with view of Saket, (2014) who postulates that when anxiety increases, academic achievement decreases among both genders. Consequently, this study concludes that a significant association exists between heightened anxiety and diminished academic achievement among students.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In this chapter, a summary, conclusions and recommendations for the implementation of intervention policy direction in similar contexts. The chapter begins with a summary of findings in tandem with the research questions. This is then followed by conclusions discussed thematically. To finish, recommendations are made to relevant stakeholders for possible consideration.

5.2 Summary of the Findings

The focus of the study centred on analysis of the worry reactions to academic activities, emotional responses to difficult learning activities, study deficit skills and task-generated interferences among students and their role on achievement academically. To this end, most students experienced heightened anxiety. Tellingly, research findings confirm a very solid association between anxiety and performance academically among university students in Kenya. Overall, the study established that anxiety has a strong bearing on the academic performance of students particularly university students at The Technical University of Kenya.

To confirm the study's first objective, the study found out that during learning students experience predictions of failure, self-degrading thoughts and are preoccupied with the consequences of doing poorly as a reaction difficult academic activity. Also, students reported of parents and school placing high demand and pressure for excellent results, referred to family related problems as preoccupy their mind while at school and identified school related problems as mentally disturbing them as well as branded thinking of their personal problems while learning as a major response to a challenging academic endeavour.

To determine the second objective which sought to explore the level of emotionality tendencies among students, findings indicate that the feeling of fast heartbeat was an emotional reaction to demanding learning activities. Besides, nausea was identified as a reaction to a tough learning activity. Additionally, sweaty palms during challenging learning events, feeling irritable when handling severe class activity and nervousness was also an emotional experience they underwent when handling hard learning activity. As well, panic, stomach upset and fear of failure were emotional responses to challenging academic activities.

Concerning the third objective, it was established that the high expectation and demands from the school and parents, put a lot of pressure on them. Secondly, procrastination, organizing and processing information were identified as other study skill deficits. Equally, having little motivation and negative attitude towards hard learning activity, instruction time for most lessons as not being adequate and faulty learning materials, were other pronounced study skill deficits. Similarly, over demanding syllabus and insensible teaching at TUK, emerged as more study skill deficits.

Concerning the final objective, respondents admitted of making minimal effort to get things right, give up quickly on hard-to-get learning tasks and saw no need to participate in difficult academic activities. Also revealed was that sometimes students prioritize crucial non-academic activities, sometimes they reported to class late and that they missed lessons sometimes. Further, students acknowledged behaving delinquently and exhibiting aggressive behaviour due to learning pressure.

Finally, on correlating the level of anxiety on the academic achievement, the study confirmed increased levels of learning anxiety reduce chances of student excelling academically. Hence, the present study confirms a robust connotation between anxiety and student achievement academically. It is against this background that the conclusions below are made. Despite its limitations, this study should be considered to add to the existing knowledge in this area.

5.3 Conclusions

Based on the results of the research, one can safely conclude the following according to the objectives of the study. It can be concluded that students experience predictions of failure, self-degrading thoughts and are preoccupied with the consequences of doing poorly as reactions to difficult academic activity. Also, students demand and pressure for excellent results, family and as well as personal problems, negatively affect students. This proves that worry related reactions adversely affect academic performance of university students.

Likewise, the study concludes that fast heartbeat, nausea, sweaty, irritability, nervousness, panic and stomach upset as well as fear of failure were emotional reactions to challenging academic activities. Further, it was concluded that high expectation and demands from the school and parents; organizing and processing information; having little motivation and negative attitude towards hard learning activity; inadequate instruction time for most lessons; faulty learning materials; over demanding syllabus and insensible teaching at TUK, were study skill deficits among students.

Further, it was concluded that students made minimal effort to get things right, gave up quickly on hard-to-get learning tasks and saw no need to participate in difficult academic activities. Also concluded, students prioritized crucial non-academic activities, reported to class late, and behaved delinquently and aggressively during learning sessions.

Overall, anxiety affect majority of students in higher institutions especially among those pursuing demanding and difficult courses. Finally, the study concludes that high anxiety levels are a cursor to dismal academic achievement.

5.4 Recommendations

This section contains the researcher's recommendations about the key findings and how best they can be addressed by the relevant authorities through policies and further research.

5.4.1 Policy Recommendations

Undeniably, the findings of this study reveal worrying trend of significant anxiety levels among undergraduate students as well as the adverse effects on academic performance. From this study, the personality anxiety level frequencies have shown that students often suffer high anxieties and as a result, their academic performance is adversely affected. Accordingly, preventive and intervention measures need to be designed to address the nerve-wracking phenomenon.

In the first place, students should get equipped with knowledge on anxiety and effective anxiety management skills for their own benefit while in school and elsewhere. By having knowledge and understanding on this research study, it

could help many, such as educators, counsellors, and psychologist to design and develop proper intervention program to reduce psychological problems among students. The students themselves could benefit from the study. Information and ideas gained from this research could help them to face, manage, and handle the psychological problems. Therefore, enhancing knowledge and strategies in controlling psychological problems among students may help to increase their academic achievement.

In addition, students should take responsibility to seek for anxiety management help from teacher counsellors, other teachers or from the peer counselling clubs within their schools in order to ensure that their anxiety levels do not escalate to levels that impact negatively on their academic results. Besides, students should realize that individuals have the capacity to decide on how they process the problems that they encounter, and that problems that are left unprocessed unconsciously become major sources of high anxiety.

Likewise, it is imperative that the students should desist from apportioning blame, and instead proactively seek to find positive solutions to their problems for better adjustment. Specifically, students should be encouraged to use all available opportunities to raise issues that cause them anxiety so that enlightening discussions could be organized either amongst themselves or with the teacher counsellors to facilitate positive resolutions to the problems raised.

The developmental process and especially during college period when students enjoy exclusive decision making, poses many anxiety causing challenges to the students especially in the event of wrong decisions. Teacher counsellors should therefore invest a lot of time in imparting knowledge on development so as to help reduce pressure that might arise from the growth process experience. Teacher counsellors therefore should help students to learn to take positive responsibility to seek counselling help when need be.

Equally, it is vital to implore student embrace tendencies of investing adequate time in preparations for learning engagements to boost self-confidence in warding off anxiety. Additionally, correspondingly, giving financial help, moral backing as well as inspiring partaking in social events, can substantially lift students' self-concept as a remedy to anxiety especially to students taking difficult courses. In the same way, students should be advised to appreciate the fact that controllable anxiety levels are instrumental to enhanced performance.

Teachers also ought to understand the nature of student's anxiety causing factors so that they are able to address the same as part of anxiety management skill acquisition process. Counsellors at the universities should help students in overcoming the anxiety caused by academic activities in variety of ways like educate students about anxiety, provide an open-communication in classroom, teach and discuss positive coping skills with students, allow students opportunities to practice and apply coping strategies etc.

Further, certain academic activities such as testing and other assessment engagement should be properly scheduled to reduce chances of generating unnecessary pressure among students. Moreover, students should be involved in decision making on learning activities to motivate and build self-

efficacy. Indeed, participation in decision making cultivates sense of ownership hence motivates students to carry out academic activities with enthusiasm and zeal.

Furthermore, universities should strengthen the counselling units and establish specific programmes to help pupils to avoid exhibiting anxiety problems when faced with the difficult tasks/moments. Lastly, relevant government ministries and agencies in collaboration with other key stakeholders should strengthen in-service activities and workshops for lecturers to enable them get knowledge and skills on students' emotional reactivity, mental health issues and how they negatively affect pupil's academic performance.

5.4.2 Recommendations for Further Research

Conceptually, this study broadly or generally examined the role of learning-based anxiety on performance of students academically, hence the need for a further study on specific types of anxiety such as test anxiety, personality anxiety, environmental anxiety and academic anxiety other forms of anxiety within and without university environment. Contextually, there is requirement for further study based on bigger sample size as well as using more research methods.

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