UNIVERSITY OF EDUCATION, WINNEBA

THE EFFECTS OF TEST ANXIETY LEVELS ON ACADEMIC ACHIEVEMENT OF THIRD YEAR SENIOR HIGH SCHOOL STUDENTS IN THE AGONA MUNICIPALITY OF THE CENTRAL REGION

EMMANUEL AMISSAH

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EMMANUEL AMISSAH

A THESIS IN THE DEPARMENT OF PSYCHOLOGY AND EDUCATION OF THE FACULTY OF EDUCATIONAL STUDIES, SUBMITTED TO THE SCHOOL OF RESEARCH AND GRADUATE STUDIES, UNIVERSITY OF EDUCATION, WINNEBA, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF PHILOSOPHY (GUIDANCE AND COUNSELLING) DEGREE.

APRIL, 2013

DECLARATION

STUDENT"S DECLARATION

I, Emmanuel Amissah, declare that with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, this thesis is entirely my own original work, and that it has not been submitted, either in part or whole, for another degree elsewhere.

SIGNATURE…….

DATE…….

SUPERVISOR"S DECLARATION

I hereby declare that the preparation and the presentation of this work was supervised in accordance with the guidelines on supervision of Thesis laid down by the University of Education, Winneba.

NAME OF SUPERVISOR……..

SIGNATURE……..

DATE……..

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DEDICATION

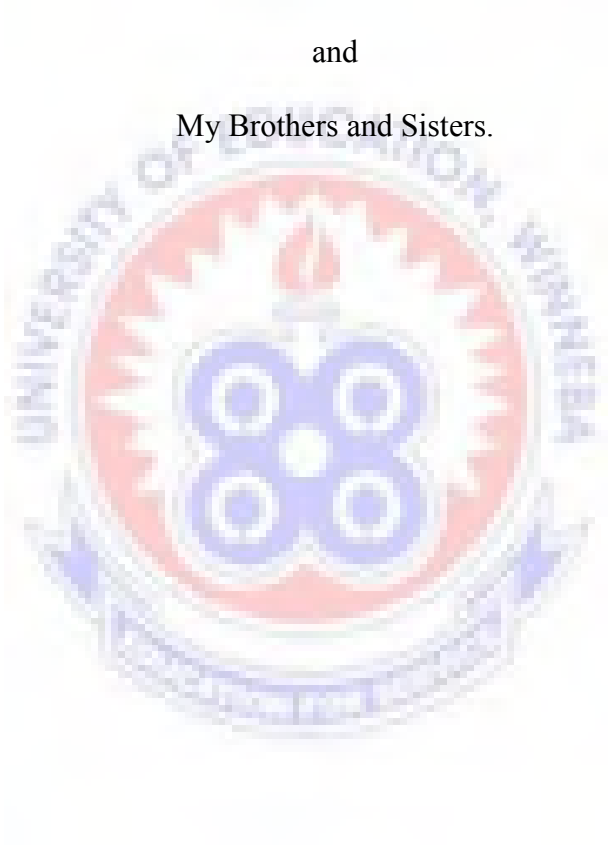
To my Loving and Caring wife Patience;

My daughters Deborah and Sandra;

My Parents who are models of Excellent Parenthood;

and

My Brothers and Sisters.



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ABBREVIATIONS

B.E.C.E	Basic Education Certificate Examination
C.G.S	Capitation Grant Scheme
C.T.A	Cognitive Test Anxiety
D.P.E	Department of Psychology and Education
F.C.U.B.E	Free Compulsory Universal Basic Education
F.S.T	Free Supply of Textbook
N.G.O	Non Governmental Organization
S.F.P	School Feeding Programme
S.H.S	Senior High School
S.P.S.S	Statistical Package for Social Sciences
T.A.Q	Test Anxiety Questionnaire
T.A.S	Test Anxiety Scale
TASC	Test Anxiety Scale for Children
U.E.W	University of Education, Winneba
W.A.E.C	West African Examination Council
W.A. S. S. C.E	West African Senior Secondary Certificate Examinations

ABSTRACT

The study was designed to investigate the relationship between test anxiety and academic performance among third year Senior High School students in the Agona Municipality. The mixed method research paradigm was employed using the descriptive cross-sectional survey design. The population was 10,357 students and 542 teachers from 5 public Senior High School. Simple random and convenient sampling techniques were used in selecting 295 participants made up of 270 students and 25 teachers. Three instruments were used for the study. This included Test Anxiety Scale (TAS), developed by Sarason (1978), was used to measure students‟ test anxiety level, author‟s self-developed questionnaire and a semi-structured interview schedule. The overall reliability of the instrument was 0.80. Quantitative data was analysed using Pearson Product-Movement correlation, linear regression, independent sample t-test and multiple regression to test the study hypotheses. The results of the interview was analysed descriptively.

Findings revealed a moderate level of students‟ test anxiety. Female students reported significant higher levels of test anxiety as compared to male students. Also, a statistically significant negative correlation was found between test anxiety and academic performance (Beta= -0.158, t =1.896 < p < 0.012). Multiple regression also revealed that test anxiety contributes negatively to students‟ academic performance than their attitude towards examination. It was concluded that teachers do not adequately help students to cope with test anxiety.

Based on the findings, it was recommended that students should be orientated towards study skills acquisition as well as anxiety reduction strategies like systematic desensitization and relaxation techniques.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Education can be impeded by a student‟s inability to demonstrate proficiency through testing in the classroom. A student may know the material; however the potential to prove his/her understanding or knowledge through testing may be limited because of test anxiety. Performance on tests is greatly influenced by levels of anxiety during test taking situations (Austin, Patridge, Bitner and Wadlington, 1995).

Students often attribute their poor performance in examinations to test anxiety. This is because anxiety can seriously inhibit the ability to concentrate and deal with things in a more positive way. Anxiety can be rational or irrational. If one is adequately prepared, but still panic at an exam that is irrational anxiety.

The construct of anxiety plays a major role in one‟s life. As a result of the increased pressure to do well, many children, adolescents and young adults become anxious when presented with tests (Collins, 1999; Supon, 2004; Huberty, 2010). This form of anxiety or too much anxiety about a test is commonly referred to as test anxiety. The move towards higher academic pursuit and greater accountability has resulted in an increased level of testing in schools (Wren and Benson, 2004; Casbarro, 2005). Students today are taking more tests than students did in the past (Wren and Benson). As the amount and the importance of tests used in education have increased, the number of students who experience test anxiety has also increased (Casbarro). This assertion is supported by Wren and Benson (2004) and Cizek and Burg (2006), who suggest that test anxiety has increased over time.

In recent years, there has been an increasing interest in the role of anxiety in education, particularly with heightened performance and accountability pressures, league tables and target setting (Putwain, 2008a). The challenge encountered by many students in their academic careers is the dilemma of test anxiety (Zbornik, 2003). Even though students may have proficiency in a subject, they are unable to demonstrate their knowledge in a testing situation because of crippling anxiety (King and Bennie, 2000).

In this regard, examination stress and test anxiety are pervasive problems in modern society. Apparently, test scores are important part of society in that they are used to measure and determine thresholds in education, career placement and advancement. As society continues to grow and evolve, test performance has become an increasingly greater factor in success (admission to senior high school, admission to graduate school, and professional examination) (Zeidner, 1998).

We must understand that test anxiety is not a learning problem it is rather an uneasiness or fear of having to prove what one has learnt. This is more prevalent with final year students where the consequence of performing poorly is inimical. This is heightened by lack of self-confidence, parental and peer pressure, memories of previous failure and lack of inadequate test readiness (Putwain, 2008).

Zeidner (1998) noted that every year, "millions of students under-perform in school and university because of heightened test anxiety" (p.17). Anxiety therefore can seriously inhibit the ability to concentrate and deal with things in a more realistic way.

A comprehensive study by Spielberger and Vagg (1995), found individuals to be relatively calm when it comes to completing a test, whereas others generally "perceive examinations as more dangerous or threatening and experience more intense levels of anxiety when taking tests" (p.6).

Test anxiety, especially worry, has an impact on academic performance, and working memory (Eysenck, 2001). Eysenck noticed that test anxiety creates irrelevant thoughts, preoccupation, decreased attention and concentration and leads to academic difficulties. When attention and concentration are impaired, they interfere with memory and the end result is low academic achievement (Chen, Li, 2000 and Sanders, 2001 cited in Needham, 2006).

Furthermore, test anxiety has emerged as one of the most silent constructs in modern day psychology and by far the most widely studied specific form of anxiety in the literature.

Since test results in most academic and occupational settings have important practical implications for a person‟s goals and future career, test anxiety is frequently reported to be a meaningful factor impacting upon test scores. In fact, much of the test anxiety research over the past half century have been motivated by the desire to ameliorate the debilitating effects of test anxiety and to find ways of helping test-anxious students become more effective in test or test- like situations.

Meanwhile, the competitive demand to pursue high academic achievement is very prevalent in our culture. As a result, on-going tests are taken as major assessment and test results are literally representative of students‟ academic achievement. It is not hard to imagine that a great degree of anxious feelings, such as stress and tension, is strongly tied with the anxiety-provoking tests.

As a result of the competition among students, teachers often use tests to evaluate their students, which is likely to cause students‟ test anxiety. Test anxiety directly affects test results, and test results may create or deflate learners‟ self-confidence and self-esteem. Students with test anxiety might be afraid of tests because of previous experiences of failure. Thus, they are conscious of their fear and anxiety from the beginning to the end. The main source of anxiety is students‟ fear of failure. Anxious students may have difficulty learning in

the first place, difficulty using or transferring knowledge, and difficulty demonstrating their knowledge during tests.

1.2 Statement of the Problem

The prevalence of test anxiety among Senior High School students is widespread. Millions of students every year experience test anxiety to the extent that it affects their academic performances and, even their future goals (Hill, 1984; Zeidner, 1998; MacDonald, 2001; Owen-Yeates, 2005). Likewise, several researchers attest to the fact that anxiety is a major predictor of academic performance (McMraty, 2007). This argument supports an earlier assertion by Champell, Blanding, Silverstein, Takahashi, Newman, Gubi, and McCann (2005) who claim that test anxiety has negative correlation with academic performance. Similarly, Cassady and Johnson (2002), Wren and Benson (2004) and Jing (2007) also shared the same view that test anxiety is negatively correlated with academic performance.

As important as examination is to the lives of students, test anxiety among Senior High School students has not been considered and given prominence in our schools. Yet, there is the evidence of test anxiety provoking factors such as negative attitude of teachers towards test applications, students‟ attitude towards learning, test invalidity, fear of negative evaluation, bad examination experiences, time limitation, difficult course content and parental expectations may triggering test anxiety (Tobias, 1980; MacDonald, 2001).

In recent times, there has been a debate among stake holders about mass failure of candidates in the Basic Education Certificate Examination (B.E.C.E.) and the West African Senior Secondary Certificate Examination (WASSCE). For example in 2007, out of the total number of 320,235 candidates who sat for the B.E.C.E, fifty (50%) percent failed to meet the criteria for placement in Senior High School. This implies that most of the candidates did not score

the lowest denominator of aggregate thirty (30) which should qualify them for admission into Senior High Schools (Warlonyo, 2008). The report of the Chief Examiner (WAEC, 2007) identified candidates‟ inability to read and comprehend questions correctly as the cause of students‟ low grade.

There are several factors contributing to students‟ failure in examination. Some of them are stress related, academic work overload, peer pressure, poor socio-cultural home environment and test anxiety. In view of these, there have been interventions by government, Non-Governmental Organizations (NGOs), teachers, and other stake holders in the educational enterprise meant to improve the situation. The government of Ghana in this regard has come out with programmes such as Free Compulsory Universal Basic Education (FCUBE), School Feeding Programme (SFP), Free Supply of Textbooks (FST) and Capitation Grant Scheme (CGS) among others with the view to improving the quality of education.

In spite of all these interventions many students continue to fail. One thing we must not forget is that, many students in reality perceive assessment or testing as an invasion of privacy and poor academic achievement as a source of humiliation. Even the word “test”, ”quiz” or “examination” arouses unpleasant memories. Once test anxiety occurs, it can become a vicious cycle, derailing satisfactory academic performance despite the student‟s sterling effort, ability and motivation.

We can therefore deduce that not all the factors which contribute to poor academic performance have been identified. Other psycho-social and socio-personal problems abound among students as a result of test anxiety. This underpins Eysench‟s (2001) and Sansigiry and Sail‟s (2006) arguments that test anxiety impaired concentration, attention and memory are factors which make it difficult for students to perform adequately.

A scan through literature on the effects of test anxiety on academic achievement among Senior High School students reveals that much research in this direction has been concentrated on European settings. There has been far less research conducted among Senior High School students in Ghana. It is from this position that the researcher finds it prudent to carry out this study to examine whether test anxiety interferes with academic achievements of students in Senior High Schools in the Agona Municipality.

1.3 Purpose of the Study

The purpose of this study was to find out the effects of test anxiety on academic achievement of third year Senior High School students in the Agona Municipality. Again, the study is aimed at examining the relationship between the various levels of anxiety and performance level of students.

1.4 Objectives of the Study

The objectives of the study were:

1. To identify the level of test anxiety among Senior High School students.
2. To identify differences in the level of test anxiety between male and female students.
3. To find out the causes of test anxiety among Senior High School students.
4. To inquire whether test anxiety has a paralyzing effect on students‟ achievement test performance.
5. To come out with anxiety reduction interventions and strategies that would help improve the performance of students in Senior High Schools.

1.5 Research Questions

The following research questions were formulated to guide the study.

1. What is the level of test anxiety among students in Senior High Schools in the Agona Municipality?
2. What are the provoking factors of test anxiety among Senior High School students in the Municipality?
3. How does test anxiety influence students‟ level of academic achievement?
4 What can be done to reduce test anxiety among Senior High School students?

1.6 Research Hypotheses

The following hypotheses were formulated to address the objectives stated.

1. There will be significant negative relationship between students‟ test anxiety and their level of academic performance.
2. There will be significant effect of test anxiety on students‟ academic performance.
3. There will be significant difference in the level of test anxiety between male and female students.
4. There will be significant difference between the performance of male test-anxious and female test- anxious students.
5. Test anxiety and students attitude towards learning will significantly contribute to students‟ academic performance.

1.7 Significance of the Study

The findings of this study would be beneficial to students. It would enable them set realistic goals to reduce stress-related anxiety and develop test readiness skills.

Teachers may use this useful knowledge to help students to reduce anxiety-provoking factors thereby helping students improve upon their performance. Also, findings of this study would be useful to teachers by exposing them to causes and effects of test anxiety, as well as symptoms exhibited by students who experience test anxiety.

Again, understanding test anxiety within a developmental contextual framework allows teachers, counsellors and parents to better intervene in cases where test anxiety is interfering with students academic performance.

Finally, findings from the study will serve as a literature reference material and a guide for researchers who would be interested in investigating similar area of study.

1.8 Definition of Terms

This section presents the operational definition of key terminologies used in this study.

Test: This refers to any instrument or procedure that samples behaviour or performance.

Academic achievement: In this study, academic achievement concept denotes teachers‟ assessment of their students‟ sterling performances.

Anxiety: It is an unpleasant emotion that a learner feels when preparing or taking an examination or test.

Test Anxiety: - This refers to negative thoughts that arise during the assessment situation that may interfere with performance.

1.9 Delimitation

The present study was confined to five public Senior High Schools in the Agona Municipality of the Central Region. Private Senior High Schools were not included in the study area. Time constraints, thus combining classroom work and that of research, lack of funds and other resources limited the researcher from carrying out the study on a larger scale.

1.10 Organization of the Study

The study is basically organized into six main chapters. Chapter one contains an introduction that describes the background to the study, statement of the problem, the purpose and objectives of the study, research questions and hypotheses and significance of the study. It also included definition of terms, delimitation as well as the organization of the study. Chapter two is devoted to the review of related literature. The third chapter presents the methodology which describes the research design, the target population, sample and sampling procedures, instruments, data collection procedures of the study and the methods of data analysis. In chapter four, the analysis of the results is presented. The fifth chapter contains the discussions of the findings.

Finally, the sixth and concluding chapter contains the summary of the findings, conclusions, recommendations, implications for school counselling and suggestions for further research.

CHAPTER TWO

RELATED LITERATURE REVIEW

2.1 Introduction

In chapter two, an attempt is made to bring to light the work of some renowned authors on the effects of test anxiety on academic achievement of third year Senior High School students. The literature was reviewed under four sections. The first section dilated on test anxiety - a general overview; the second was the conceptual basis for the study dealing with the theoretical and empirical studies; while the third section looked at the relationship between test anxiety and academic performance and finally interventions to reduce test anxiety. A brief summary concluded the chapter.

2.2 Test Anxiety: A General Overview

Research on test anxiety has a long and fruitful history (for a brief historical overview, Zeidner, 1998). While first studies relating to test anxiety were conducted as early as 1914 (Folin, Demis, and Smillie, 1914; Stober and Pekrum, 2004), test anxiety entered the stage of scientific investigation when Mandler and Sarason (1952) developed the first instrument to assess anxiety for adults in 1952 based on the Test Anxiety Theory called the Test Anxiety Questionnaire (TAQ) (Stober and Pekrun, 2004; Cizek and Burg, 2006). The TAQ consisted of thirty seven (37) questions and was developed to measure the extent to which test-takers were engaged in actions that were either task-relevant (helpful in completing the task) or task-irrelevant (hindering successful completion of the task (Cizek and Burg, 2006). This was the first time test anxiety began to be recognized as a multidimensional construct.

2.2.1 The concept of anxiety

Looking at the historical antecedent, it was Freud who defined anxiety within personality theory (McReynolds, 1985). Freud (1959) described anxiety as "something felt" (a particular unpleasant emotional state or condition of human organism). In psychoanalytic theory, Freud explained three levels of anxiety, which he saw as originating in the ego. Neurotic anxiety developed from the failure of the ego's defences to suppress primal impulses. Neurotic anxiety could lead to phobias, generalized anxiety and panic attacks.

According to the psychodynamic theory, anxiety results from a failure to repress painful memories, impulses or thoughts. Behavioural theories look at it as a reaction to stimuli in the environment. For example, getting conditioned to fear examinations since they have come to be associated with failure. Biologically, human beings are genetically predisposed to react differently to anxiety provoking situations (Harris, 1983).

In a comprehensive study based on Freud‟s psychoanalytic model, Rachman (2004) describe anxiety as the tense, unsettling anticipation of a threatening but vague event; a feeling of uneasy apprehension. Students with anxiety often have negative views about their ability to cope with a particular threat (Wolfe, 2005).

Other scholars such as MacCarthy (2007), Vitasari, Nubli, Othman, Herrawan and Sinnaduri (2010) echo this sentiment and put it more forcefully that anxiety is a subjective feeling of tension, worry and nervousness and it is one of the significant predictors of academic performance. This underpins Hill and Wigfield (1984) argument that high test-anxious students have more difficulty in organizing their thoughts.

From a different perspective, Connolly, Simpson, and Petty (2006) note that anxiety is a normal reaction to stressful situation. In the school setting, anxiety is experienced often by

students under evaluative conditions. Lewis (1970) posits that anxiety is an unpleasant emotion experienced as dread, scare, alarm, fright, trepidation, horror or panic.

Based on earlier studies, Bandura (1997) states that people experience anxiety when they perceive a situation as dangerous and beyond their control. Test related- anxiety is one of the most commonly cited sources of students" stress and it has become more prevalent as schools have attached more serious consequences to standardized testing (Moses and Naana, 2007).

From the psychoanalytic standpoint, Freud, the Austrian psychologist, believes that anxiety is caused by internal conscious conflicts. What can be common about anxiety in various definitions is the unpleasant nature, its projection to the future and its similarity to fear.

2.3 Test Anxiety Construct

Several decades of test anxiety research reveal a division in the general focus of studies identified in the literature. These studies focus on either understanding test anxiety as primarily an academic problem or test anxiety as primarily an emotional problem. In educational research, test anxiety has been approached as a school-specific problem, with a focus on detrimental academic correlates (Convington and Omelick, 1987; Cassady and Johnson, 2002).

According to Zeidner (1998), test anxiety is strongly related to failure consequences. This connection can be noticed in Sarason and Sarason (1990) who state that when not in an evaluation situation, the highly test anxious individual may not worry about possibilities of failure, embarrassment and social rejection. But in evaluation situations these possibilities become vigorous. Undoubtedly, students who suffer from test anxiety do not necessarily lack the ability to perform but rather other deficits related to test anxiety, interfere with academic performance (Everson and Millsap, 1991).

Based on extensive review of literature, Zeidner argues based on a comprehensive study that academic performance depends on the information processing that directly control learning and comprehension of classroom material, such as focused attention and long term memory retrieval. Sarason (1984) believes that learners‟ capacity, task difficulty, fear of getting bad grades and lack of preparation for a test are the other factors that make learners worried. Concerning task difficulty, Gaudry and Spielberger (1971) and Zeidner (1998) seem to share the same view.

Academically, test-related anxiety can have a negative cognitive impact at all phases of learning new information, studying and preparation, and taking tests (Cassady, 2004; Mesler, 2008). Matthew, Tracy and Scott (2000) contend that test anxiety is a serious problem for many students and has been described as the most powerful obstacle to learning in an educational setting.

Zeidner (1998) argues based on earlier works by Spielberger and Vagg (1995) outlined three components of test anxiety:

- Cognitive: the negative thoughts and depreciating self-statements that occur during assessments (e.g. „if I fail this exam my whole life is a failure‟) and the performance inhibiting difficulties that may arise from anxiety (e.g. recalling facts and difficulty in reading and understanding questions);
- Affective: the person‟s appraisal of their physiological state (such as tension and trembling) occurring during the assessment situation.
- Behavioural: deficient study skills and procrastination of academic work.

Interestingly, Hembree (1988) suggests that test anxiety was primarily a behavioural phenomenon since behaviour modification techniques reduced test anxiety only when the emotionality component was targeted.

Most recent conceptualizations of this construct (Zeidner, 1998; Meijer, 2001) focus on fear-of-failure as the central characteristic, although some broader conceptualizations exist.
Other descriptions of the phenomenology of test anxiety (Spielberger, 1966; Lowe, Lee, Witteborg, Pritchard, Luhr, Cullinan, ….Janik 2008; Putwain, 2009) postulate ego/esteem threats and fear of failure.

Nonetheless, fear of failure offers a clear link between the test anxiety and achievement goals framework (Hagtvet, 1983; Hagtvet and Benson, 1997; Putwain, 2008a). Much of the significance of test anxiety, however, is derived from its potentially debilitating impact on learning and achievement (e.g., Hembree, 1988; Putwain, 2008b).

Additionally, Lang and Lang (2010) found that students with higher test anxiety tend to disengage from academic performance situations and perform worse on academic tasks.
From a different direction, MacDonald (2010) posits that students' past experiences with courses and their perceptions of course load, as well as their ability to manage time may result in unique reactions to a test situation.

Again, Test anxiety refers to worry, apprehension, palpitation, increase in pulse rate and other physiological symptoms during the exams (Vitasari, Nubi, Othman, Herrewan and Sinnaduri, 2010). Test anxiety is an apprehension over academic evaluation. It is a fear of failing in test situations and an unpleasant experience held consciously or unconsciously by learners in many situations. It is a type of anxiety concerning apprehension over academic evaluation which comes from fear of failure (Horwitz and Young, 1991).

Test-anxious individuals can be seen to be easily distracted, experience difficulty in comprehending relatively simple instructions, while they find it hard to organize and recall relevant information during the test procedure (Zeidner). The issue of test anxiety may jeopardize the assessment of cognitive functions due to test takers performing sub-optimally when they experience high levels of test anxiety.

Furthermore, Huberty (2009) reports that test anxiety can have significant negative effects on a student‟s ability to perform at optimal level. In the school setting, stress and anxiety are normal reactions that any candidate experiences before, during and after test. The test anxiety argument explains that test anxiety lowers academic performance. This relationship has been studied for well over sixty years. From a different direction, test anxiety does not lead to academic performance (Burns, 2006; Sansigiry, Bhosle and Sail, 2006). More important is the fact that most other studies have found test anxiety to correlate with academic performance.

Students with test anxiety have experienced psychological symptoms including increased feelings of worry, nervousness, and emotionality (Sena, Lowe and Lee, 2007), reduced self-esteem, and weak academic self-concept (Miesner and Maki, 2007; Wong, 2008; Putwain and Daniels, 2010).

2.4 Classification of Anxiety

Anxiety is like other affective factors such as: tiredness, boredom, anger and emotional disorders. It is entirely related to the psychology of the individual. It does not occur as a single issue; it can rather acquire forms of manifestation and can be categorized as: general anxiety, trait anxiety, state anxiety situation specific anxiety and academic anxiety.

2.4.1 General anxiety

Test anxiety is separated from the general anxiety construct by stipulating the events in which it occurs (Putwain, 2008). Morris, Davis and Hutchings (1981) regard general anxiety as worry and emotionality. Brown (1994), Oxford (1999), Chen and Wu (2004) and Horwitz, Horwitz and Cope (1986) made a similar observation that anxiety constitutes trait anxiety, state anxiety and situation-specific anxiety.

2.4.2 Trait anxiety

According to Spielberger, Charles, Sarason and Irwin (2005) trait anxiety is a general characteristic of an individual‟s personality. Individuals, who experience an anxiety trait, tend to have an attitude and reaction which reflects their ability to understand the nature of certain environmental stimuli and stressful situations more or less difficult or threatening.

Brown defined trait anxiety as the likelihood of an individual becoming anxious of any situation. A tendency to be anxious is a permanent personality characteristic. Therefore, an individual with high trait anxiety would probably become apprehensive in many different situations (Macintyre and Gardner, 1991).

2.4.3 State anxiety

Spielberger, Charles, Sarason and Irwin identify the second type of anxiety (state anxiety) as an obstacle and an interruption of students‟ emotional equilibrium. For example, when a person hears bad news about a very close friend, he becomes so anxious that emotional equilibrium is put into question. A person who experiences state anxiety is more likely to feel stressful and nervous or unable to confront any event. In such moments, the person may feel nervous and can easily react to external stimuli. Spielberger (1983) cited in Chen and Wu

(2004), defines state anxiety as unpleasant temporary emotional condition, activated by the individuals‟ nervous system, such as the apprehension experience before taking a test.

Moreover, high levels of state anxiety are particularly harmful. It can even disable the person‟s tendency to engage in adaptive behaviour aimed at ending and overcoming this feeling, for example an individual encountering a lot of difficulties. Young (1990) cited in Cubuku (2007) notes that the negative effects of anxiety, such as diminished cognitive performance, are generally associated with state anxiety.

2.4.4 Situation-specific anxiety

Spielberger and Sarason (1989) define test anxiety as a situation-specific trait that refers to the anxiety states and worry conditions that are experienced during examinations. Interestingly, Spielberger and Vagg explain that test anxiety construct is considered as a situation-specific trait accounting for individual difference in the extent to which students find examinations threatening.

2.4.5 Academic anxiety

Recently, Cassady (2010) introduces the term academic anxiety as “a unifying formulation for the collection of anxieties learners experience while in schools” (p. 1). Senior High School students report that examinations and studying are sources of considerable stress (Huges, 2005). Research suggests that academic stressors are sufficient to induce a physiological stress response (Huges, 2005; Papousek, Nauschnegg, Paechter, Lackner, Goswami and Schulter, 2010).

Undoubtedly, students put up avoidance attitude and constantly requiring reassurance (Foxman, 2004). Academic anxiety is distracting and preoccupying students‟ minds with

irrelevant things that do not pertain to the task at hand (Vassilaki, 2006). Thus, their energy is wasted on what could be used to help improve their overall academic performances.

Supon (2004) explains the types of test anxiety differently. She suggests three different types of anxiety in her research as follows:

- First, students who lack study skills and the ability to organize or comprehend the main ideas of the information being taught.
- The second type is students who possess proper study skills but in reality they fail under evaluative situation.
- The third is a type of students who believe they possess quality study skills, but in reality they do not.

2.5 Components of Test Anxiety

A conceptual contribution, advanced by Liebert and Morris (1967), was the critical differentiation between worry and emotionality. These researchers analysed the responses of students to Mandler and Sarason‟s Questionnaire (TAQ: Mandler and Sarason, 1952). They made a theoretical distinction between two distinguishable components of test anxiety (cognitive and emotional). Based on earlier studies, Deffenbacher (1978), Kaplan, McCordick and Twitchell (1979) and Spielberger (1980) also shared the same view.

The first component “worry” is related to the cognitive aspects, meaning the mental activity that goes on during the testing involves potential negative self-image about oneself. Goonan (2003) and Cizek and Burg (2006) support an earlier assertion by Liebert and Morris who emphasize that, worry is a cognitive concern about one‟s performance and it entails thinking about the consequences of failure, negative comparisons to peers, and self doubts and negative expectations. Typical reactions that come along with test anxiety are feeling of

distress, uncontrollable, and emotional discomfort that appear from time to time. In a study, Liebert and Morison found that the factor of worry had stronger negative relationship with performance outcomes than emotionality. This view is also supported by researchers who notice that test anxiety is stronger in the worry component and has significant devastating effects on performance than emotionality (Tryon, 1980; Goonan, 2003; Eysenck, Santos, Derekeshan, and Calvo 2007; Owens, Stevenson, Norgate, and Hadwin 2008; Putwain, Connors and Symes 2010)

Morris and Liebert further state that the second component, "emotionality" is related to the physical reactions to test situations, such as nervousness, sweating, cold hands, constantly looking at the clock and so on.

2.5.1 Summary

Anxiety is a normal human emotion that can be detrimental in a school setting. Although everyone worries occasionally, excessive and frequent worry can impair social, personal and academic functioning. A review of the relevant literature indicates that test anxiety, especially worry, has an impact on academic performance (Eysenck, 2001 cited Keogh, 2004). When test anxiety is severe, it can have significant negative effects on students" ability to perform at an optimal level.

2.6 Theoretical Perspectives of Test Anxiety

Research on test anxiety has shaped many models designed to explain the phenomenon. Creswell (2003) noted that theories "provide a lens to guide the researchers as to what issues are important to examine and the people that need to be studied" (p.131). In order to understand more about test anxiety and performance, several theoretical models have been put

forward to explain the nature, causes and antecedents of test anxiety. These models were developed to drive the study.

2.6.1 Interference Model

The interference model proposes a reduction in performance as a result of test anxiety because of the presence of interfering thoughts (Wine, 1980; Sarason, 1988). One perceives test anxious student as one who knows the course material, but freezes up during examinations and, therefore is unable to recall prior learning. According to this model, test anxiety is an interfering agent and students with high levels of test anxiety tend to divide their attention between task performance and personal concerns principally composed of negative self-pre-occupations.

The problems with most students are that, during tests, individuals with test anxiety focus on task-irrelevant stimuli which negatively affect their performance (Sarason, 1975). Similarly, this reason underpins the argument by Naveh-Benjamin, McKeachie and Lin, (1981) who suggest that students have certain capacity of processing information and test anxiety might block one‟s attention and inability to pay attention to the learned material under evaluative setting. Sarason (1984) supports this by saying “a cognitive interference may be the key factor in lowering the performance of highly test-anxious people” (p.931).

On the other hand, the interference model contest that highly test anxious students may know the material, but have problems in organizing, processing and retrieval the information during examination (Taylor and Quagraine, 1999; Part-Stamm, Gollwitzer and Oettingen, 2010).

Cognitive interference (as it is manifested in test anxiety) has been well established as a cause for reduced performance during evaluative situations (Hembree, 1988; Cassady, 2004; Veenstra, Lindenberg, Oldehinkel, DeWinter, and Ormel, 2006).

Hembree, in his meta-analysis, found that this cognitive component of test anxiety is the factor that is most consistently found to be associated with poor performance. Sarason, Sarason and Pierce (1996) and Cassady and Johnson (2002) and Cassady (2004) argue that the interference model reduces academic functioning as a result of cognitive distraction associated with worry and doubt during testing and preparing for test.

The general view, however, is that this model is unsatisfactory, when students are taught test-taking skills, the relationship between test anxiety and lower performance still holds (Hembree). However, techniques used to teach students to deal with the interfering thoughts, such as cognitive modification, lead to a positive impact on performance.

In summary, the interference model states that high test anxious students are plagued by worry and distracting thoughts that interfere with their ability to retrieve information during a test. This accounts for students "freezing up" in an examination (Musch and Brodes, 1999; Tobias, 1990). Interference is caused by intruding thoughts with no functional value in solving the cognitive task at hand.

2.6.2 Skills Deficit Model

Contrary to this theoretical position, some research investigations reveal that interfering thoughts during the test-taking situation might not sufficiently establish the preponderance of the criterion variance in tests and therefore question the rationality of the interference model.

A deficit model emerged in the 1980s as a result of research linking high test-anxiousness with deficits in study skills (Whittmaier, 1972) and test-taking skills (Kirkland and Hollansworth, 1978). In the first model the problem lies not in taking test, but in preparing for test (Tobia 1990; Klejin, Vander-Ploeg, and Topman, 1994). Jing (2007) notes that high

test-anxious students lack study skills or habits can have negative ramifications on learning and performance.

The skills deficit model suggests that students who experience test anxiety do so because they have learning difficulties and are unable to adequately learn and integrate content material (Culler and Holahan, 1980; Tryon, 1980; Birenbaum, 2007). According to this model, individuals perform poorly not due to test anxiety, but due to poor study skill (Culler and Holahan, 1980; Tryon, 1980; Naveh-Benjamin et al 1987; Birenbaum, 2007).

Despite the general perception held, researchers argue that test anxiety does not cause poor performance but rather poor study habits and inability to organize and retrieve information during examination time generates the anxiety. From a different direction, Musch and Brodes also found out that study habits had no impact on examination performance. Therefore, to increase test performance, this model recommends an increase in encoding, retrieval and test taking skills.

In summary, the skills deficit model suggests that students who experience test anxiety do so because they have learning difficulties and are unable to adequately learn and integrate content material (Culler and Holahan; Tryon; Birenbaum). It further states that students with high test anxiety develop poor study skills. A lot of studies have identified the root of test anxiety as lying in students‟ poor preparation.

2.6.3 Cognitive-Attentional Model

This model was proposed in the 1970s by Wine (1971) and Sarason (1978). The cognitive-attentional model posits that the factors comprising anxiety (e.g worry cognitions, anxious states and irrelevant thoughts) interfere with the cognitive-attentional processes. The difference between high test-anxious and low test-anxious individuals rests on the amount of

attention available to tackle the test taking task. High test-anxious students in evaluative situations perceive performance demands as ego threatening, which leads to self-focus, and division of attention between task and self-related cognitions. This assertion is supported by Lowe and Lee (2007) who state that anxiety divides attention between task-relevant and task-irrelevant thoughts which lead to disturbed recall of prior learning. The outcome is poorer concentration and impaired task performance (Zeidner, 1991).

In summary, a close look at this model focuses on the importance of reducing off- task thinking in testing situation to improve test performance. This model indicates that study skill training alone is woefully not effective at reducing anxiety but rather strategies aimed at cognitive component of anxiety (Ergene, 2003).

2.6.4 Social Learning Model

In the early 1980‟s a social learning model emerged, bringing forth the idea that modelling, observational learning and social influences contribute to effective learning. The constructs of locus of control (internal verses external), self efficacy (i.e. one‟s belief in one‟s own ability to do a specified task) and outcome expectations (i.e. an individual‟s idea of outcome based on skills and motivation) were identified as variables that contribute to effective learning.

Self-efficacy is defined as the belief in one‟s ability to perform a task or to execute a specified behaviour successfully (Bandura, 1997). Self efficacy is explained in the theoretical framework of social cognitive theory by Bandura (1997) which states that human achievement depends on interactions between one‟s behaviours, personal factors and environmental conditions. Bandura (1982) argues that test anxiety develops in a social context. According to Schwarzer (1994) and Bandura (1995), self-efficacy can make a difference in people‟s ways of thinking and reasoning. With respect to feeling, a low sense of self-efficacy is associated

with anxiety and helplessness. In contrast, a strong sense of belief in one‟s self facilitates cognitive processes influencing decision making (Grau, Salanova, and Peiro, 2001). Jing (2007) found a significant negative correlation between test anxiety and self-efficacy.

Efficacy beliefs also trigger emotional reactions. For example, individuals with low self efficacy believe that a task is tough and hence build stress, depression and a narrow vision on how to solve problems. On the other hand, those with high efficacy would be more relaxed in solving difficult tasks. Therefore, these influences are strong determinants of the individual‟s level of achievement (Rahil, Habibah, Loh, Muhd, Nooreen and Maria, 2006).

Many studies have shown that there is significant relationship between self-efficacy and test anxiety (Seif and Latifian , 2004; Akban and Ogundokun,2006; Zinta, 2008). Test performance, according to this model, may be improved by a shift in locus of control from external to internal, enhancement of self efficacy or improvement in outcome expectations.

In summary therefore, the belief one has is a key factor in exercising control and personal efficacy. Self efficacy affects behaviour in two ways; either the individual engages in tasks he feels competent and confident in or avoids those that he feels contrary. This helps to determine how much effort, perseverance and resilience an individual put on a task.

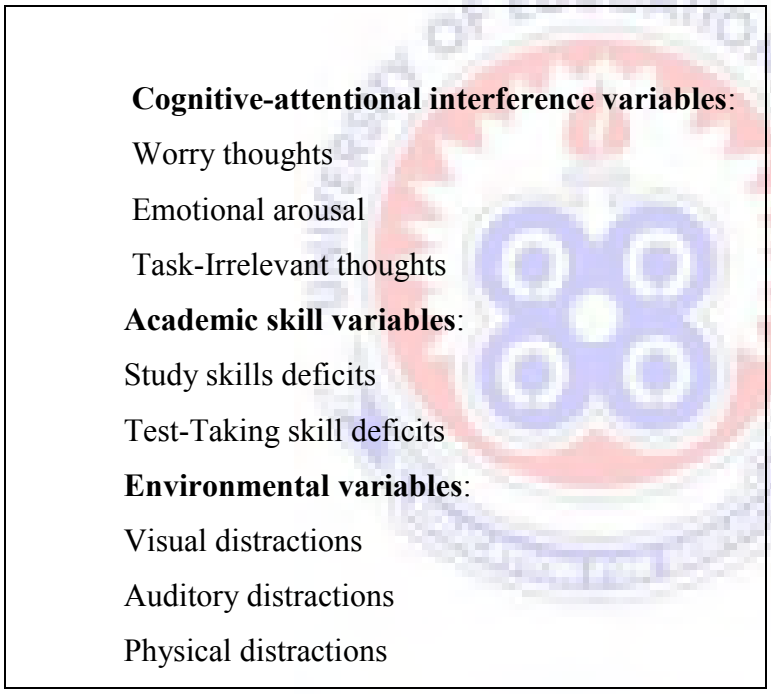
2.6.5 Integrative Model

Naveh-Benjamin et al (1987) suggested an integrated model of test anxiety that incorporate the cognitive components, (i.e., negative self-talk, worry thoughts, task irrelevant thinking and physiological reactions), in study skills (i.e., inadequacies in the acquisitions, organization or retrieval of information), and social learning factors (i.e., self-esteem, locus of control, test-taking self-efficacy and outcome expectations). This model proposes two types of test anxious students: those with appropriate learning strategies who are unable to retrieve content

information during examinations and those with poor learning strategies who do not learn the information during the training process (Naveh-Benjamin et al.).

The variables proposed for inclusion in this integrative treatment model have been broadly classified into three categories: cognitive-attentional variables, academic skill variables, and environmental variables, as seen in Figure 2.1

Figure 2.1: Variables Included in the Integrative Model of Test Anxiety



Academic skill variables include the well-documented factors of study skill deficits and deficient test-taking skill. In addition, test related variables, such as time pressure, modes of administration, and types of test construction are subsumed under the academic skill variable of test-taking skill deficits. As such, a student who becomes anxious when taking essay tests, for example, would be viewed as having a test-taking skill deficit. If this student also ruminates about this deficiency, worry thoughts would also be implicated. Environmental

factors present in the testing situation provide an additional set of variables that are potentially under a student's control. These variables include visual, auditory, and physical distraction.

In summary, the integrative model variables include worry thoughts, emotional arousal, and task irrelevant thinking, and incorporate social learning variables such as external locus of control, expectancy of poor outcomes, and low test-taking self-efficacy, under the category of worry thoughts.

2.6.6 Information- Processing Model

Tobias (1985) combined cognitive interferences and poor study skills with a new concept that he called cognitive capacity to explain how test anxiety affects performance. This information-processing view states that students have a limited capacity for processing information, and that this capacity is diminished when the mind is being engaged by task-irrelevant behaviours (Naveh-Benjamin et al, 1987). Information was processed in stages, first, encoded, then stored and organized, and finally retrieved. High test anxious students tend to encode information more superficially and have more problems organizing information than low test-anxious students. This anxiety results in less effective study habits and less effective information processing.

Test anxiety depletes the available processing capacity (Vagg and Papsdorf, 1995) and when demand exceeds capacity, performance suffers. Thus, in order to increase test-taking performance, according to this model, one makes better use of cognitive capacity by organizing and synthesizing information and decreasing task irrelevant thoughts so that attention can be focused on the task.

In summary, this model assesses how well students are able to use their reasoning skills as learning strategies to help them learn. In other words, it describes how knowledge is processed, stored and retrieved from the mind.

2.6.7 Concept Organization Model

Schutz, Davies and Schwanenflugel, (2002) discuss theories of emotion and emotion regulation that influence the way students experience thoughts and feelings during examinations. They discussed four conceptual sub-domains: cognitive appraisal, task focusing, emotion-focusing and emotion-experiences. Apparently, students who are considered to be high test- anxious are likely to have varying concepts about the testing situation.

2.6.7.1 Cognitive appraisal

According to schutz et al, cognitive appraisals occur when a student assesses the testing situation in relation to his or her goals. This model states that, in order to achieve student‟s goals, specific events must take place (e.g. ability to recall certain information, responding correctly to a certain percentage of questions) in order to achieve the expected grade. It also focuses on student‟s ability to cope and handle the test, having the confidence to deal with challenging questions and strategies to guess at multiple choice questions.

2.6.7.2 Task focusing

Task-focusing as described by Schutz et al is the student‟s ability to focus and manage the task at hand (e.g. the exam itself). Task-focusing consists of processing, analysing important concepts of an examination-question, strategically keeping track of and managing time, selecting the best from options and checking answers.

2.6.7.3 Emotion-focusing

Emotion-focusing is described as an occurrence where the student‟s attention drifts away from the examination to their own emotions (Schutz et al). For instance, a student may engage in self-talk that deemphasize the test importance. However, a student may engage in self-blame and acts of preponderance which may precipitate or elevate test anxiety.

2.6.7.4 Emotion-experiences

Emotion-experiences as described by Schutz et al are the types of emotions that the students experience. These emotions can be pleasant (satisfactory) or unpleasant (anger, hopelessness). However, if the examination is not skewed to students‟ expectations, arouses unpleasant emotions which are likely to engage in feelings of disappointment. Schutz et al found that moderate test-anxious students distinguished concept based on their ability to regulate task-focusing and emotion-focusing processes. Moderate test-anxious students had the tendency to rate their ability to focus on the task successfully to maintain balanced emotions described as being pleasant. Again, moderate test anxious students endorsed feeling of confidence during the examination; these were significantly correlated with the endorsement of pleasant emotions.

2.6.8 Summary

Although theories of test anxiety provide important insights into the test anxiety construct like interference model, deficit model and many others, much of the research on test anxiety is focused on the differential impact of emotionality and worry has received substantial scrutiny.

Overall, these theories suggest that test anxiety is a complex phenomenon involving several different elements: worry, emotionality, interference, concept organization, and skills deficits.

Researchers have propounded several theories in an attempt to explain the relationship between anxiety and cognitive performance.

No matter the theoretical model underpinning the relevance of test anxiety, researchers continue to turn on their research beam light to advance further arguments. Whatever the approach, students might become test-anxious for a variety of reasons.

2.7 Empirical Studies

Despite the approach to understanding test anxiety, more empirical work has been done examining the relationship of test anxiety and academic performance.

2.7.1 Cognitive test anxiety correlates negatively with academic performance

Cognitive Test Anxiety (CTA) causes poor academic performance in cognitive tasks (Cassady, 2004; Cassady, Mohammed and Mathieu, 2004). It was found to have correlated negatively with performance scores in cognitive tests (Zoller and Ben-Chain, 2007).

Similarly, Kassim, Hanafi and Hancock (2008) conducted a research to explore test anxiety and its consequences on academic performance among university students. The results of this research suggested that test anxiety was negatively related to academic performance.

A research study conducted by Cassady and Johnson (2002) "to investigate the effect of cognitive test anxiety on students" academic performance and found that cognitive test anxiety exerts a significant stable and negative impact on academic performance measures" (p.12).

A research study conducted by Taylor and Quagraine (1999) investigated the effect of test anxiety on learning and achievement among adult students. Data was collected from a sample of 250 post-diploma degree students of the University of Education, Winneba and found that test anxiety exerts a significant stable and negative impact on academic performance.

A comprehensive study by Sarason (1995) showed that test anxiety has a detrimental effect on individual‟s performance than students‟ attitude towards examination. Test anxiety made students feel less confident, more anxious and more worried.

2.7.2 Relationship between test anxiety and academic performance

Again, Chapell, etal (2005) conducted a research study to explore the relationship between test anxiety and academic performance. They collected data from a sample of 5,551 undergraduate and graduate students in Pennsylvania and Illinois and found a significant difference of academic achievement among three different levels (low, moderate, and high) of test anxiety. For instance, students with low test-anxiety had higher academic achievement than students with moderate and higher test-anxiety. Again, students with moderate test-anxiety had higher academic achievements than students with higher test anxiety. Similarly, Cassady and Johnson provided evidence that moderate, but not low or high levels were related to higher examination performance. Most other studies, however, failed to support this finding (Sarason, 1984; Hembree, 1988; Hong, 1999; King, Ollendick and Prins, 2000).

Vogel and Collins (2002) investigated the effect of test anxiety on academic performance and according to the findings, the students with high-test anxiety as well as those students with low-test anxiety showed lower academic performance. Moreover, those students with moderate levels of test anxiety performed better.

2.7.3 Test anxiety and gender differences

Several researchers explored gender differences with respect to test anxiety and found that females have higher levels of overall test anxiety than males (Vijayalaxi and Natesan, 1992; Cassady and Johnson 2002; Wren and Benson, 2004; Chapell et al, 2005; Egbochuku and Obodo, 2005; Cizek and Burg, 2006; Kayapinar, 2007; Eizadifard and Sepasi Ashtiani, 2010).

Potmernatz, Altermatt and Saxon (2002) explained that boys had a higher mean academic achievement than girls.

The results contradict earlier findings that showed that girls experience higher levels of anxiety than boys (Keeves, 1985; Chapell et al., 2005; Soffer, 2008). Comparatively, Cassady and Johnson (2002) explained the differences in test anxiety on the basis of students‟ gender and maintained that boys and girls feel the same level of test worry, but girls have higher levels of emotionality while Yenilmez and Ozbey (2006) found no significant difference in the anxiety levels in terms of gender variable.

Educational researchers have reported that test anxiety is more prevalent in girls than in boys regardless of grade level (Hambree, 1988; Locker and Cropley, 2004; Cizek and Burg, 2006). From elementary school through medical school and across cultures, girls typically report higher levels of test anxiety than boys (Hembree, 1988; Zeidner, 1998; Putwain, 2008). Roberts (1991) and Bodas, Ollendick and Sovani (2008) found out that girls easily show their emotions publicly whiles boy hold back their emotions.

No significant gender differences were found on test anxiety in a study of a sample of elementary children in Florida. However, females were found to be slightly more anxious than males at different grade levels (Soffer, 2008).

Regarding the correlation of anxiety and gender, Rezazadeh and Tavakoli (2009) conducted a survey to look into the relationship among gender, academic achievement, years of study, and levels of test anxiety.

One hundred and ten undergraduate students (65 females and 45 males) from the University of Isfahan were involved. Results showed that in contrast to male students, female students had a higher level of test anxiety as their mean scores of test anxiety reached higher. A

statistically significant negative correlation was observed between test anxiety and academic achievement and there was no meaningful relationship between test anxiety and years of study. Similar to the findings of Tang‟s (2005) study among college students, this study indicated high school students indeed had the feeling of anxiety and experienced fear of negative evaluation.

2.8 Causes and Symptoms of Test Anxiety

There are many reasons that account for test anxiety. The first one is lack of preparation as indicated by (a) cramming the night before the examination, (b) poor time management, (c) failure to organize text information, and (d) poor study habits.

The second one is worrying about (a) past performance on examination, (b) how friends and other students are faring and (c) the negative consequences of failure. In addition, a student may experience physical signs of test anxiety during an examination like perspiration, sweaty palms, headache, upset stomach and rapid heartbeat.

2.8.1 Lack of self-confidence and low self-esteem

Research suggests that examinations are stressful for final year students for four reasons (Denscome, 2000; Putwain, 2007) consequences or thoughts of failing, low self-esteem, judgements from significant others, and fear appeals by teachers. Test-anxious children and adolescents “do not approach a task such as test with a positive outlook or expectation of success, but with dread regarding the potential for negative evaluation or failure” (Cizek and Burg, 2006: p. 17). Meijer and Oostdam (2007) examined the relationship between test anxiety and intelligence and found that lack of confidence and worry are contributing factors to test anxiety.

Worry, emotionality, gender, and socio-economic background were significant predictors of test anxiety in the study conducted by Putwain (2007). Again, Turner, Beidel, Hughes and Turner (1993) in their research suggested that test anxiety was related to academic achievement, poor self-concept and fearfulness.

2.8.2 Procrastination

Procrastination has been commonly understood as a maladaptive behaviour that impedes successful academic experiences. It is considered a complex phenomenon with cognitive, affective, and behavioural elements that involve the intentional postponement of an intended course of action despite awareness of possible negative consequences (Steel, 2007). Steel defines procrastination as "voluntarily delaying an intended course of action despite expecting to be worse off for the delay" (p. 66).

Procrastination on academic tasks is a common problem among students (Day, Mensink, and O'Sullivan, 2000; Wolters, 2003). A substantial body of literature has shown a negative association between procrastination and academic performance (Elvers, Polzella and Graetz, 2003; Moon and Illinggworth, 2005; Akinsola, Tella, and Tella, 2007; Wang and Englander, 2010). As well, procrastination has been linked to other adverse behaviour and outcomes including poor study habits, test anxiety, cramming for examinations, late submission of course work, fear of failure, fear of social disapproval by peers, lower grades, sense of guilt, and depression (Dewitte and Schouwenburg, 2002; Fritzsche, Young, and Hickson, 2003; Lee, 2005; Uzun, Ozer, Demir, and Ferrari, 2009).

2.8.3. Poor study skills

Test anxiety relates to students' poor study skills. This reinforces the argument made by Cizek and Burg (2006) who classified students' exhibiting test anxiety into three main categories:

- the first category are those who do not have appropriate test-study and test-taking strategies and are aware that they are not well prepared,
- the second category uses appropriate test preparation strategies, but then become distracted during testing,
- the last group believe that they have appropriately prepared for the test but then perform poorly and as a result are not able to pinpoint why (Cizek and Burg).

Naveh- Benjamin, et al, (1987) have found that when compared with less anxious students, highly test-anxious students have difficulties in organizing material to be learned. Several researchers attest to the fact that high test anxious students have less effective study habits as compared to their low anxious counterparts (Culler and Holahan, 1980). This view is supported by Hembree, (1988) and Casbarro, (2005) who suggested that lack of effective study skills contributes to poor performance under evaluative conditions, which in turn leads to heightening feelings of anxiety when it comes to performing in subsequent examinations. Sharma, (2002) contends that students with high test anxiety experience threat, poor study skills, and negative non-productive attitude toward academic work as compared to the low test anxious student.

2.8.4 Poor time management

Another factor that increases test anxiety and affects performance is time limit. According to Ohata (2005), learners sometimes felt pressured to think that they had to organize their ideas in a short period of time. Some scholars address the dedication of time as an important study skill (Lahmers and Zulaur, 2000; Linderholm, Cong, and Zhao, 2008; Nonis and Hudson, 2010). Nonis and Hudson hypothesize that it is not the amount of time but the quality of study habits that builds academic skills.

2.8.5 Inappropriate test technique

Another factor that affects negatively students‟ performance is inappropriate test technique. Young (1991) found that students felt anxious when they had studied for hours for a test and then found in the test question types which they had no experience about. Additionally, test anxiety as a factor that affects learning is a barrier that stops learners from performing well on tests (Jackson, 2001).

Literature on test anxiety shows that some of the factors that influence students‟ reactions to tests are related to test validity, time limit, test techniques, test format, length, testing environment and clarity of test instructions (Young, 1999)

2.8.6 Fear of negative evaluation

Fear of negative evaluation is the avoidance of evaluative situations and expectations that others will assess them negatively. Learners may be sensitive to evaluation of their peers (Cubuku, 2007). Generally, test anxiety is a type of performance anxiety deriving from a fear of failure and evaluative situations. And if it is high, it results in failure in examinations.

Students with fear of negative evaluation might adopt the action of avoidance (Casado and Dereshiwsky, 2001; Chen and Wu, 2004). In Aida‟s (1994) opinion, students with fear of negative evaluation might sit passively in the classroom, withdrawing from classroom activities that could otherwise enhance their study skills. In extreme cases, students may think of cutting classes to avoid anxiety situations, causing them to be left behind (Wilson, 2006; Sila, 2010).

2.9 The Concept of Poor Academic Performance

According to Aremu (2000), poor academic performance is adjudged by the examinee and some others as falling below an expected standard. Several researchers devoted much work on factors affecting academic achievement of students with the belief that academic achievement would be improved upon if the factors were adequately addressed. Some of the factors include: self-efficacy, self-concept, peer influence, parental involvement, tone of the school, the society, and government (Aremu, 2000; Adesemowo, 2005; Adeyemo, 2007; Desoete, 2008; Tenibiaje, 2009).

In contrast, Putwain, Woods and Symes (2010) found that achievement goals, perception of confidence and situation influences impact on test anxiety. For some students, the teachers‟ attitude influences their performance and anxiety (Collins, 1999; Supon, 2004). Therefore, it is important for teachers to minimize these influences to positively impact test scores and achievement.

Academic self concept has also been shown to have a negative relation with overall anxiety in general, and with performance anxiety in particular (Putwain, 2009). Tooley and Dixon (2006), suggest that the type of school that a pupil is enrolled in has an effect on the pupil‟s achievement.

2.10 Test Anxiety and Academic Performance.

In educational institutions, success is measured by academic performance or how well a student meets standards set out by the Ghana Education Service. A comprehensive study showed that test anxiety causes poor academic performance (Hembree, 1988; Campbell and Ortiz, 1991; Johnson, 1997). It is worth noting that test anxiety has a negative correlation with student‟s academic performance. Therefore, the high-test anxious students tend to score lower

than low-test anxious students. This result was supported by the findings that test anxiety negatively impacts on academic performance (McDonald, 2001; Eman and Farooqi, 2005). Again, Matthew, Tracy and Scott, 2000 describe test anxiety as the most powerful obstacle to learning in an educational setting.

The effect of test anxiety on academic performance has been thoroughly investigated by many researchers (Wine, 1971; Cassady and Johnson, 2002; Hagtvet and Sipos, 2004; Rezazadeh and Tavakoli, 2009). Hambree (1988) as cited in Everson and Millsap (1991) states that test anxiety is linked to fear of negative evaluation and inadequate study skills has been identified as one of the factors that impair academic performance.

However, a recent study by Putwain showed that, bizarrely, the low stakes tests seemed influenced more by anxiety than the high stakes test. Research has supported this finding that both academic self-concept and perceived test competence are both negatively related to test anxiety (Putwain, Woods and Symes, 2008). Again, Dorney (2005) concludes that anxiety does not only hinder achievement but in some cases improves achievement performance.

2.10.1 Test anxiety and achievement goals

The self-regulatory process in Zeidner and Mathews‟ (2005) model places a greater emphasis on motivation and self-perception than has been present in previous models of test anxiety (Spielberger and Vagg, 1995; Zeidner, 1998). Hagtvet and Benson (1997) suggest that test anxiety and performance-avoidance constructs are related by a fear-of-failure. Test anxiety, with its emphasis on information processing and interference models of anxiety-performance represents the cognitive aspect of the fear-of-failure and performance-avoidance, with its emphasis on goal orientated behaviour, the motivational aspect. Elliot and McGregor (1999) propose a hierarchical integrative model in which highly trait test anxious students could

adopt performance-approach or performance-avoidance goals. The majority of research has supported a positive relationship between performance-avoidance goals and test anxiety (Elliot and McGregor, 1999; Pekrun, Elliot, and Maier, 2006; Tanaka, Takehara, and Yamauchi, 2006).

It is widely acknowledged that students‟ academic achievement and ability depend on both internal and external factors such as proper study habits, intelligence, and parental expectations, among others. If these situations are not conducive for learning would lead to academic stress.

2.11 The Influence of Teachers on Students‟ Performance

Teacher support and student‟s learning style can reduce stress-related anxiety among students in Senior High School. On the other hand, parental and teacher pressure can heighten students‟ anxiety levels under any evaluative conditions.

2.11.1 Teacher support

McNaught (2007) indicated that teachers‟ professional competences are able to create a good learning environment in which students have high and positive achievement expectations. Alcala (2002) suggests that teachers should familiarize students with examination format, the type of rating system. By creating a stress free environment allows students to concentrate on the test rather than being distracted by test anxiety.

The teacher‟s attitude is a major factor since students do not want to study a subject that the teacher seems uninterested in or uncomfortable with. Other studies have identified teachers‟ positive regard and institutional support influence students‟ motivation, attitudes, and competency (Chouinard and Karsenti, 2005).

2.12 Facilitating and Debilitating Anxiety

Debilitating anxiety, however, has a negative impact on student‟s motivation and preparation before and during examinations, like waiting until the last minute to revise and prepare for a big test or examination, feeling more anxious and unprepared or arriving at the venue for a test late and having to answer all of the questions (Alpert and Haber, 1960).

According to MacIntyre (1995), anxiety can be facilitating or debilitating. Facilitating anxiety motivates learners to adopt an approach attitude which makes them more willing to confront the new learning task. Debilitating anxiety causes learners to assume an avoidance attitude and therefore tend to escape from the learning task. He claimed that when a given task was relatively simple, anxiety could be facilitating. On the other hand, if the task was too difficult, anxiety would impair performance. Facilitative anxiety helps students to succeed and has been found to be present in students with better results in test of all kinds (Hembree).

2.13 Effects of Test Anxiety on Students‟ Performance

Academic performance can be affected by a plethora of variables. Test anxiety is one of those variables expected to have a negative effect on performance. Cassady and Johnson (2004) and Jing (2007) are among researchers who proved that the test anxiety is negatively correlated with academic performance.

Studies on academic outcomes of test anxiety have overwhelmingly found that students with test anxiety perform worse on examinations than their non test-anxious counterparts (Abu-Rabia, 2004; Meisner and Macki; 2007; Putwain, 2008). Additionally, it has been found that test anxiety negatively impacts performance evaluative situations (e.g., testing, presentations, performances), but even more so when the external evaluative pressure is high (Hancock, 2001; Cassady, 2004a). Although test anxious students often spend more time

studying for tests than their peers, they lack confidence in their ability level, feel inadequate, and see themselves as more susceptible to failure (Johnson, 2007).

Students with high levels of test anxiety tend to have reactions based on threat perceptions, reduced feelings of self-efficacy, self-derogatory conditions, anticipatory failure attributions and more intense emotional reactions and arousal as the first signs of possible failure (Ergene, 2003). High test anxious students do not perform well academically, have lower test scores and the tendency of dropping out of school associated with feelings of generalized anxiety, depression and hopelessness (Lowe and Lee, 2007). Some symptoms that teachers and parents may notice are resistance to attending school, withdrawal at school or at home, lowered self-esteem and self-efficacy, pessimistic attitudes, poor grades, verbal expressions of concern, and a profound fear of failure (Cizek and Burg, 2006; Johnson, 2007). Students with test anxiety may also spend long time taking tests, leading to test fatigue (Johnson). According to Baloglu (2002), two major theories address the effects of anxiety (Cognitive Interference and Deficit Theory).

2.14 Interventions to Reduce Test Anxiety

Test anxiety interventions have fallen into four different categories: behavioural (Hembree, 1988), cognitive behavioural (Kennedy and Doepke, 1999), study and test-taking strategies and relaxation therapy training (Cheek, Bradley and Reynolds, 2002).

2.14.1. Creating a positive classroom environment

The creation of a stress free environment or atmosphere allows students to concentrate and adopt good study habits (Price, 1991). Research has suggested that children experienced increased test anxiety in highly evaluative classroom environments (Cassady, 2004a). Furthermore, accessible and user-friendly tests contain clear and complete directions that help

students understand the context and conditions associated with test questions. Good test taking skills are the panacea to reduce test anxiety (Whitaker and Lee, 2007; Holzer, Madaus, Bray and Kehle, 2009). Furhermore, a good test directions are presented in a language all students can understand and do not contain vague terms and irrelevant information that may confuse and frustrate students or be misinterpreted by them (Salend, 2009; Brookhart and Nitko, 2008; Elliott, Kettler, Beddow, Kurz Compton, McGrath and Roach, 2010).

Cizek and Burg (2006) proposed five interventions for reducing test anxiety namely behavioural, cognitive, cognitive-behavioural, study skills, and test-taking skills. Behavioural approaches focus on the student„s emotionality, cognitive approaches focus on worry, cognitive-behavioural approaches focus on the combination of worry and emotionality, study skill approaches focus on a student„s knowledge and skills deficit, and test-taking approaches focus on the student„s poor test taking skills (Cizek and Burg). The most effective interventions appear to be from a combination of cognitive and behavioural treatments with skill focused approaches (Hembree,1988; Ergene, 2003; Cizek and Burg, 2006).

Systematic desensitization is a technique that involves implementing relaxation strategies (deep breathing) while imagining the feared stimuli (taking a test) and has been shown to effectively reduce test anxiety (e.g., Cheek, Bradley and Reynolds, 2002; Egbochuku and Obodo, 2005; Weems, Taylor, Costa, Marks, Ramano, Verrett and Brown, 2009). Systematic desensitization involves the creation of an anxiety hierarchy, that is, a list of situations that make an individual feel anxious, starting with the least anxiety provoking situation and continuing to the most anxiety provoking situation. This is an effective method that involves relaxing while imagining the feared stimuli, which can lead to long term reduction of anxiety surrounding the stimuli. Once students are familiar and comfortable with the use of relaxation

strategies (Weens et al, 2009), they can be encouraged to practice these strategies while imagining something that makes them worried.

2.14.2 Effective test-taking skills

The following are several ways to support students to develop good study skills: Students can improve test performance by learning to budget their time based on the amount of time given to them to complete the test (Denstaedt, Kelly, and Kryza, 2009; Strichart and Mangrum, 2010).

More interestingly, several researchers‟ talk about ways to support students to learn better study skills that would enable them address the purpose, content and format of the test and students working in groups to predict likely tests questions or material difficulty (Walker and Schmidt, 2004; Conderman and Pedersen, 2010; Leininger, Taylor Dyches, Prater and Allen Heath, 2010)

2.14.3. Time management skills

One way to reduce students‟ anxiety during testing is by teaching them to use effective test-taking skills and strategies (Whitaker Sena, Lowe, and Lee, 2007). There are many teachers who have found that specific strategies work better for some students and some work better for others (Cheek, 2002; Supon, 2004; Flannery, 2008; Huberty, 2010; Stowell and Bennet, 2010).

CHAPTER THREE

METHODOLOGY

3.1. Introduction

This chapter discusses the methodology of the study which includes the research design for the study, the target population, sample and sampling procedures. It discusses the validity and reliability of instruments used as well as methods used for data analysis.

3.2. Research Design

This study employed the mixed method, using the descriptive cross-sectional survey design. The mixed method (Tashakkori and Teddlie, 2003) design is a procedure which employs both quantitative and qualitative data within a single study to understand a research problem more completely (Creswell, 2002). This design was deemed appropriate because it made it possible to describe the conditions, situations and events of the phenomenon, test anxiety, among Senior High School students without manipulating any variable.

According to Mertons (2003) and Tashakkori and Teddlie (2003), the mixed method approach has the following advantages over a single approach design.

- First, the researcher would supplement survey questionnaire with an interview component to strengthen the findings (Phakiti, 2003).
- Secondly, mixed method research can „cancel out" the disadvantages that come with a single method (Creswell. Clark, Gutmann, and Hanson, 2003). This means that, the use of multiple methods can add insight and understanding that might be missed when only a single method is used.

In spite of the advantages of the mixed method approach, researchers have recognized some disadvantages as follows:

- More time, cost, and effort are needed in carrying out this type of research.
- Researchers have to be equipped with skills and knowledge in multiple methods and to understand how to mix them appropriately.

3.2.1. Justification for using mixed method design.

According to Greene, Caracelli, and Graham (1989), Tashakkori and Teddlie (1998), the rationale for mixed method is that, neither quantitative nor qualitative methods are sufficient by themselves to capture the trends and details of a situation. In relation to this, the researcher deemed it appropriate to employ the mixed method where quantitative and qualitative methods would complement each other to allow for more complete analysis.

Furthermore, it was assumed that the use of the mixed method could increase the validity of the research findings (Eezberger and Kelle, 2003; Tashakkori and Teddie, 2003). In this regard, both quantitative and qualitative data were collected and analysed accordingly.

3.2.2. Justification for using the cross sectional survey

Survey research typically employs questionnaires and interviews to determine the opinions, attitudes, preferences, and perceptions of persons of interest to the researcher (Borg, Gall and Gall, 1993).

The survey methodology was chosen for this study for the following reasons.

- To ask the same questions from all the participants in the study.
- To use descriptive research for summarizing and analyzing collected data.

- To report the results of each question with a larger number of inputs (Foddy, 2001).

Akinade and Tunde (2009) posit that a survey research design gathers data or information from a relatively large population usually through random sampling and it has the following advantages:

- It provides data on attitude and behaviours useful to different researchers.
- It is cheaper than longitudinal study which required no follow-up.

On the other hand, the survey design has the following disadvantages:

- It cannot establish cause and effects and therefore has no control of the independent variable.
- Generalization is limited by sample size (population definition) and may require a very large sample size (especially when looking at rare outcomes or exposures)

To address these weaknesses, the researcher did not manipulate any variable but allowed the data to speak.

The mixing of the data serves to integrate the results of the two data sets by providing convergent evidence in the explanation of the social phenomenon being studied (Creswell, 2009). Bryman (2000) argued that combining quantitative and qualitative research provides a more accurate picture of social reality.

3.3. **Population**

Amoani, (2005) defines population as the totality of whatever object or measurement the researcher is investigating. The target population for the study comprised of all students and teachers of public Senior High Schools in the Agona Municipality. The population was 10,357 students and 542 teachers from 5 public Senior High Schools (Municipal Education Office Report, 2012). There were 4,982 girls and 5,375 boys constituting 48.1% and 51.9%

respectively. Out of 542 teachers, 310 were males and 232 females representing 42.8% and 57.2% respectively. The Agona Municipality was chosen for the study because it is relatively a commercial area, fairly populated with a number of schools. It was therefore hoped the population would provide the data necessary for drawing valid conclusions.

3.4. Sample and Sampling Technique

Bryman and Bell (2003), refer to samples as the population that is selected for investigation. All the five (5) public Senior High Schools in the Agona Municipality were selected using the purposive sampling technique for the study. Purposive sampling is appropriate for selecting unique cases that are specialized, especially informative or from a difficult-to-reach population (Neuman, 2006).

The sample size for the study consisted of two hundred and seventy (270) third-year Senior High School students randomly selected and twenty five (25) teachers interviewed using the convenient sampling technique. In all, a sample size of two hundred and ninety five (295) participated in the study. In each of the five schools, fifty four (54) students and five (5) teachers were involved in the study. According to Seidu (2007), the simple random technique gives every member in the sampling frame an equal and independent chance of being chosen for the study.

According to Neuman (2006), a convenience sample is a non-random sample in which the researcher selects participants that fit into specific criteria and are accessible. This convenience sampling method was adopted for easy access to participants, which Neuman describes as a quick sampling method. Convenience sampling is particularly useful for detecting relationships among different phenomena in terms of accessibility and proximity to the researcher. The selected schools were:

1. Swedru School of Business,
2. Nsaba Senior High School
3. Nyakrom Secondary/ Technical School
4. Kwanyako Senior High School and
5. Swedru Senior High School.

In addition, the researcher gave out sheets of papers for those willing to participate in the study. Students were asked to pick sheets of papers which had "YES" written on them representing the required number of respondents and "NO" for those excluded from participating. With the random sampling, those who picked „YES", were selected to constitute the sample size.

Students from SHS3 were chosen because they had been in school for more than two years and it was believed they had adjusted to school life and could give more appropriate responses to the questionnaire. Third year Senior High School students have a comparative urge over SHS1 & 2 students. The SHS4 were excluded from the study because data collection may suffer as a result of the shortness of their stay. It was assumed that candidates were busy preparing for their final examinations and that could have an effect on the retrieval of questionnaires.

3.5. Instrumentation

Three instruments were used to gather the necessary data from students and teachers. These were:

1. Test Anxiety Scale (TAS) constructed by Sarason (1978).
2. Author"s self-developed questionnaire which consisted of three (3) scales assessing factors causing test anxiety, students" attitude toward examination and influence of test anxiety on performance scale and
3. Semi-structured interview schedule developed by the author.

3.5.1. Test Anxiety Scale (TAS)

This instrument was constructed and validated by Sarason (1978) and adapted by the researcher to tap the test anxiety construct in the Ghanaian context. The Test Anxiety Scale (TAS) is a self-administered 14-item test and students were required to rate their levels of anxiety on a four-point Likert-type scale. Students were required to complete the questionnaire in 30 minutes. The first section elicited demographic data of students. The items 1 to 8 measures emotionality aspect of students' anxiety, whiles items 9 to 14 measures worry aspect of the students‟ test anxiety**.** The questionnaire obtained satisfactory Cronbach alpha of 0.76 for emotionality and 0.81 for worry. The overall reliability coefficient of TAS was 0.80. Each statement on the TAS is followed by a four-point Likert-type scale ranging from Strongly Disagree =1, Disagree =2, Agree =3, to Strongly Agree =4. The minimum score on each of the fourteen questions is one and the maximum score for the whole test is fifty six.

3.5.2. Author‟s Self-Developed Questionnaire

The author‟s self-developed questionnaire was a 21 item questionnaire used to assess the relationship between test anxiety and academic performance. The instrument consisted of three sections. The first section consisted of 8-items used to measure factors causing test anxiety. Participants responded to each item on a 5-point Likert-type scale ranging from Not at All =1, Slight Extent =2, Moderate Extent =3, Fairly Large Extent =4 and Very Large Extent =5. The questionnaire obtained satisfactory Cronbach alpha of 0.78.

The second section consisted of 8-items which assessed students‟ attitude toward examination. This instrument was on a four-point Likert-type scale ranging from Strongly Disagree =1 to Strongly Agree =4. The questionnaire obtained satisfactory Cronbach alpha of 0.72.

The third part of the instrument measured the relationship between students‟ test anxiety and their academic performance. It consisted of 5-items on a four-point Likert-type scale ranging from Strongly Disagree =1, Disagree =2, Agree =3, and Strongly Agree =4. The questionnaire obtained satisfactory Cronbach alpha of 0.81.

3.5.3. Semi-Structured Interview Schedule

According to Wragg, 2002 (cited in Kusi, 2012) semi-structured interview is appropriate "as it allows respondents to express themselves at length, and offers enough shape to prevent aimless rambling" which afforded the researcher the opportunity to clarify and probe responses of interviewees to ascertain their feelings, experiences, and coping strategies on test anxiety (p.47).

The schedule contains five (5) questions used to interview teachers to find out their views on measures to reduce test anxiety (see Appendix E). Example of items asked were „what are the provoking factors of test anxiety among your students?‟ and „what can be done to reduce students‟ test anxiety?‟

3.6. Students Academic Performance

The researcher obtained the students‟ test scores from their cumulative records. The researcher used scores of the two terms of the students and summed them to get the average mark. For example, if a student scored a total of 580 in the first term and 640 for the second term, the final total for such a student will be (i.e. 580 + 640 = 1220/16 = 76.3). It was divided by 16 because it was assumed that the students study 8 subjects within a term and in two terms sums up to 16.

3.7. Testing Validity and Reliability

The goal of a good research is to have measures that are reliable and valid (Creswell, 2005). Reliability and validity are the two main psychometric characteristics of measuring instruments.

According to Ofori and Dampson (2011), reliability refers to the consistency to which a test or instrument would produce similar measurement, given similar conditions. Another major concept involved in measurement is validity. It refers to the extent to which a test, scale or instrument measures what it is intended to measure (Ofori and Dampson, 2011). The validity of research instruments was strengthened by assessing the questionnaire items during their construction. Some form of validity (face validity) was established when the questions were discussed with the supervisor for verification. This was to clear any lack of clarity and ambiguity. Content validity was established, before going to the field, when the questionnaire was fully developed.

To ascertain the validity and reliability of the instrument a pilot study was conducted on sixty (60) students at Swedru School of Business who were not part of the sample. The purpose of the pilot study was to determine the procedure of data collection. The Cronbach‟s coefficient alpha, a measure of internal consistency, was used in determining the reliability of the instrument for the main study. Internal consistency reliability denotes the extent to which all the sub parts of the instrument measure the identified attributes. The results obtained were entered into the computer and reliability analysis was run. The reliability coefficient attained from the questionnaire was stated under each instrument.

The semi-structured interview scheduled was also piloted at the same school. Five teachers were involved in the pilot interview.

3.8. Data Collection Procedure

Firstly, the researcher obtained an introductory letter from the University (see Appendix I) introducing him to the sampled schools to gather data for the study. The Agona Municipal Director of Education was also contacted for permission to collect data from the schools.

Training on test administration was ensured. The questionnaires were given to students in the selected schools to complete in the classroom after classes whilst teachers were interviewed a week later. Before administration of Test Anxiety Scale (TAS), the researcher explained the purpose, what is expected of the respondents and solicited the cooperation of staff. Rapport was established by assuring them of the confidentiality about their personal information which would be used for research purpose only and kept confidential. TAS questionnaire was individually administered to all the research participants to determine their test anxiety level during the second term examination for 2011/2012 academic year with the assistance of guidance coordinators in the sampled schools.

Again, the self-developed questionnaire was administered to students during the second term examination to assess the relationship between students‟ test anxiety and their level of academic performance.

The researcher collected the examination scores of the respondents in English and Mathematics for the first and second terms of the 2011/2012 academic year.

All the two hundred and seventy questionnaires were duly filed and returned, and subsequently used for the analysis.

3.8.1. Interview Data Collection

It was a one-on-one or face-to-face semi-structured interview which involved the use of the convenient sampling technique. The rationale behind the use of interview as a data collection tool was to provide access to things that cannot be directly observed, such as feelings, thoughts, intentions, or beliefs (Merriam, 1998: cited in Ohata, 2005: 140). This was useful for gathering qualitative data on the subject under investigation.

The interviewees who consented to the invitation participated in the interview. The interview session with each respondent lasted approximately 25-30 minutes at a location which was free from distraction. All the interviews were tape- recorded, played back to respondents to ensure reliability and validity of data. In each of the five (5) schools, five (5) teachers were individually interviewed within a period of two weeks.

3.9. Data Analysis Procedure

Data were computed and analyzed using the Statistical Package of Social Sciences (SPSS) version 16.0. The research questions were analysed using frequencies, tables and percentages. Pearson correlation, linear regression, independent sample t-test, and multiple regression were used to test the hypotheses. Pearson Correlation analysis was conducted to establish the strength and directions of the various levels of test anxiety and students‟ academic performance. Linear regression was used to examine the contribution of test anxiety to students‟ academic performance. Independent sample t-test was used to determine whether differences exist between boys and girls as regard the level of test anxiety. Multiple regression was conducted to predict the contribution of test anxiety and students‟ attitude towards learning.

3.9.1 Interview Data Analysis

Consistent with Creswell (2005), the researcher audio-taped interview responses and transcribed them immediately after the interview. The interviews were subjected to a thematic content analysis, with themes identified and categorized (Neuendorf, 2002). The transcription involved listening to the conversation repeatedly looking for relevant analytic material.

The initial stage was the organization of data to generate themes. The transcription of recorded interviews involved listening to each tape repeatedly to be familiar with the conversation. This was followed by systematic coding of data according to the themes identified. It presented a detailed description of each of the themes. Finally, to make the findings authentic, direct quotations of interviewees were included in the report.

3.10. Ethical Considerations

The researcher ensured that any information provided was kept confidential by using it only for the purpose of this research. Also, the anonymity of the participants was protected by ensuring that the recorded information, semi-structured interview schedule and the research findings ensured privacy as well as the security of the participants. Among the significant issues that were considered included consent, confidentiality and data protection.

In the conduct of the research, the questionnaire was drafted in a very clear and concise manner to prevent conflicts among respondents. Participants were given ample time to respond to the questions posed to them to avoid errors and inaccuracies in their answers. The respondents' cooperation was eagerly sought, and they were assured that the data gathered from them was treated with the strictest confidentiality. This was done with the hope to promote trust between the researcher and the respondents.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter is devoted to presentation of data collected through questionnaire to students and interview of teachers. Frequencies, multiple regression, Pearson correlation coefficient tests, independence sample t-test and linear regression were tools used to analyse the quantitative data.

Data were analysed in three sections. Section „A" deals with the respondents" demographic data; section "B" presents the treatment of research questions, while section "C" deals with the testing of the study hypotheses.

4.2. Section "A" – Demographic characteristics of student respondents

Demographic variables of the students included age, sex, and programme offered. There are presented in tables and interpreted accordingly.

Table 4.1: Distribution of Students Respondents by Sex, Age, and Programme the students offer (N=270)

Variables	Frequency	Percentage
Sex		
Boys	140	51.9
Girls	130	48.1
Age		
14 – 16	96	35.6
17-19	113	41.9
20-22	61	22.6
Programme		
Business	28	10.4
Gen. Arts	61	22.6
Gen. Agric	34	12.6
Visual	25	9.3
Home Economics	56	20.7
Science	43	15.9
Technical	23	8.5

Table 4.1 shows the sex distribution of the students. Male students were 140 constituting 51.9% while female students were 130 representing 48.1%. Again, 96 of the student respondents, representing 35.6 % were between the ages of 14 and 16 years, 113 representing

41.9% were between 17 and 19 years. Those found between 20 and 22 years were 61, representing 22.6% of the total number of students.

With regards to programmes offered by students, 28(10.4%) students were offering business, 61(22.6%) were reading General Arts, while 34(12.6%) were offering General Agriculture. Students offering Visual Arts were 25(9.3%). Those reading Home Economics were 56(20.7), 43(15.9%) were reading Science, while 23(8.5%) were offering Technical courses.

Table 4.2: Distribution of Teacher Respondents by Sex, Age, Marital Status, Qualification and Teaching Experience (N=25)

	Frequency	Percentage
Sex		
Male	14	56
Female	11	44
Age		
25 – 30	4	16.0
31 – 36	5	20.0
37 – 42	6	24.0
43+	10	40.0
Marital status		
Divorced/Single	8	32
Intact	17	68
Qualification		
Diploma	5	20.0
First Degree	13	52.0
Second Degree	7	28.0
Teaching experience (years)		
1 -10	3	12.0
11- 20	5	20.0
21- 30	4	16.0
31 - 40	6	24.0
41+	7	28.0

As indicated in table 4.2, 56% of the teachers were males and 44% were females. The findings revealed that 10(40%) of teachers who participated in the study were above 43 years.

The ages of 6(24%) ranged between 37 and 42 years, while a small percentage, 16%, fell within the ages of 25 and 30years.

On their marital statuses 17 teachers, representing 68%, were married, whiles 8 of them representing 32% were unmarried. With regard to their qualifications, 5 of them representing 20% reported that they were holding Diploma certificates. 13(52%) were first degree holders while 7 of them representing 28% had obtained their masters degrees. The table further shows that out of 25 teachers, 3 of them (12%) reported to have had between 1 and 10years teaching experience. Five, 5(20%) indicated that they had taught between 11 and 20 years. Again, 7 of them (28%) reported that they had more than 41 years of teaching experience.

4.3. Section B - Treatment of research questions

4.3.1. Research Question One: What is the level of test anxiety among students in Senior High Schools in the Agona Municipality?

In answering this research question, data gathered by the use of the Test Anxiety Scale (TAS) was analysed. The level of test anxiety was grouped into low, moderate and high.

For the purposes of this study, respondents who obtained a score of less than thirteen (<13) were classified as “low”. Those who obtained scores between 13 and 26 were regarded as “moderate”. A score between 27 and 39 was interpreted as high level of test anxiety.

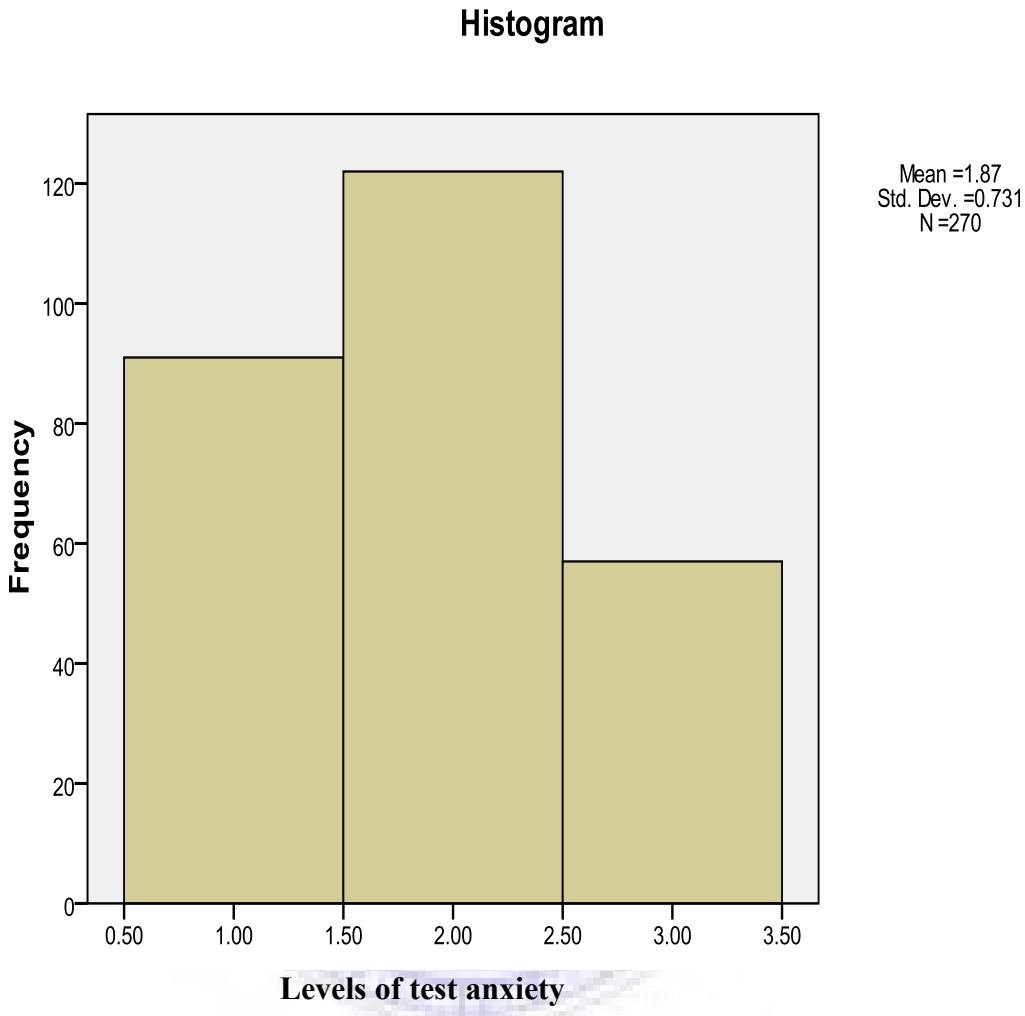
Table 4.3: This table illustrates students‟ level of test anxiety:

Levels of students‟ test anxiety

Anxiety Levels	**Number of students**	**Percentage**
Low	91	33.7%
Moderate	122	45.2%
High	57	21.1%
Total	**270**	**100%**

It is evident from table 4.3 that close to half of the participants (122, 45.2%) were at moderate test anxiety level, 91 of them, representing 33.7% were at low anxiety level while 57 representing 21.1% were at high test anxiety level.

Figure 4.1: Levels of students‟ test anxiety.



Levels of student‟s test anxiety

With regards to individual items, Figure 4.1 (see Appendix F) illustrating students‟ anxiety level of each statement. Majority of the students‟ respondents identified moderate response to each of the test anxiety item. For example, with respect to item 1, „„I worry while I am taking a test‟‟‟, out of 270 students, 155 of them representing 57.4% indicated moderate

level, 79(29.3%) reported high test anxiety level while 36 of them representing 13.3% also reported low level of test anxiety on that statement.

4.3.2. Research Question Two: What are the provoking factors of test anxiety among Senior High School students in the Municipality?

This question was designed to determine the factors that provoke students‟ test anxiety.

Table 4.4 reveals students‟ test anxiety levels. The table shows that the factor that had the highest percentage was problem of study habits and test readiness skills 7(28%), followed by students‟ inadequate preparation 6(24%), whiles limited study time and lack of confidence had the lowest percentage 2(8%).

Table 4.4: Factors causing test anxiety

Statements	Responses							
	VLE	FLE	ME	SE	NA	M	SD	I
1.Lack of confidence	80	91	56	31	12	2.07	2.86	FLE
2.Fear of not achieving the best.	96	79	55	26	14	2.19	2.78	VLE
3.Inadequate preparation	133	99	38	-	-	3.76	1.98	VLE
4.Family expectation	120	93	46	11	-	3.09	2.22	VLE
5.Limited study time	128	95	47	-	-	3.27	2.09	VLE
6.Negative feedback from teachers	111	98	52	9	-	2.89	2.36	VLE
7.Problem of study habits and test readiness skills	149	106	15	-	-	4.08	0.89	VLE
8.Over-ambitious achievement target	107	102	53	8	-	2.51	2.53	VLE

Mean of Means = 2.98 **Standard Deviation = 2.62**

Source: Field data (2012)

Key to Table

VLE= Very Large Extent, FLE = Fairly Large Extent, ME = Moderate Extent, SE = Slight Extent**,** NA = Not At All. M= Mean, SD= Standard Deviation and I= Interpretations

Based on the table 4.4 indicated that the most affecting factor is stated in question 7 that showed the highest mean of 4.08 and standard deviation of 0.89. Most of the students agreed to very large extent and fairly large extent that the problem of study habits and test readiness skills are the factors causing test anxiety.

Comparatively, the second affecting factor, „Inadequate preparation" comprised a mean of 3.76 and standard deviation of 1.96. On the other hand, the third affecting factor which is „Limited study time" had a mean of 3.27 and standard deviation of 2.09. It is followed by „Family expectation" which also recorded a mean of 3.09 and standard deviation of 2.22. The next affecting factor is „Negative feedback from teachers" which comprised a mean of 2.89 and standard deviation of 2.36. The last affecting factor was „Lack of confidence" which indicated lowest mean of 2.07 with standard deviation of 2.86.

4.3.3. Research Question Three: How does test anxiety influence students" level of academic achievement?

The data analysis to answer this research question was based on the mean and standard deviation. The highest value of mean explains the rating factors that influence students" level of academic achievement. Their responses were presented in the table 4.5.

Table 4.5: Influence of test anxiety on students‟ level of academic achievement

Statements	Responses						
	SA	A	D	SD	M	SD	1
During exam, I find it difficult organizing my thoughts.	145	59	53	24	3.61	1.36	SA
During exams, I find it difficult to retrieve key information.	112	87	48	33	2.73	3.16	SA
I do not feel confident and mentally relaxed before a test.	106	68	54	42	2.69	3.21	SA
I have difficulty reading and understanding the questions on the exam paper.	113	62	46	45	2.74	2.93	SA
I usually score lower on a test than I do on assignments.	114	76	41	39	2.76	2.69	SA

Mean of Means = 3.1 **Standard Deviation = 0.88**

Source: Field data (2012)

Key to Table

SA= Strongly Agree, A= Agree, D= Disagree, SD= Strongly Disagree, M= Mean, SD= Standard Deviation and I= Interpretations

Based on the table 4.5, the most affecting factor stated in question 1 shows the highest mean of 3.61 and standard deviation of 1.36. This shows that majority of the students said „During exam, I find it difficult organizing my thoughts‟. The second affecting factor is‟„„ I usually score lower on a test than I do on assignments‟„ which comprises a mean of 2.76 and standard deviation of 2.69. The third affecting factor is „I have difficulty reading and understanding the questions on the exam paper‟ with the mean of 2.74 and standard deviation of 2.93. This is

followed by „During exams, I find it difficult to retrieve key information‟ factor consisting a mean of 2.73 and standard deviation of 3.16. The last affecting factor is „I do not feel confident and mentally relaxed before a test‟ which comprises a mean of 2.69 and standard deviation of 3.21.

4.3.4. Research Question Four: What can be done to reduce students‟ test anxiety?

In answering this research question, 25 teachers were interviewed. Their views were analysed and put into themes. Verbatim explanations have been added to give fuller explanation to issues that emerged.

On appropriate test-taking strategies 7 (28%) of teachers explained that students need good testing skills to overcome test anxiety. The following were what a respondent said:

> *"There are some students, who under normal circumstance understand the material but on a test, become nervous that they freeze up and are not able to recall the information. Some may even become physically ill as a result of their nervousness."* [10/1/12]

Another teacher respondent expressed it this way: *"Students develop a "state of mind" that adversely affects performance in an exam."* [13/1/12]

Another said:

> *"there are some students who do not perform to their highest potential because of how worried they are about the test. Test anxiety involves a combination of emotional and physical factors, stemming from the stress of worrying and dreading one's performance on an assessment, and can interfere with learning and lower test performance."* [13/1/12]

The quotations above seem to suggest that memory difficulty may be a problem at the retrieval stage rather than the encoding or learning stage. Undoubtedly, worries described by the students about their inability to recall learnt material were due partly to insufficient learning. The description of cognitive deficits as occurring primarily as a recall or retrieval problem is consistent with the cognitive-attentional theory (Srason, 1978; Lowe and Lee; Eysenck, et al, 2007). Again, ineffective study technique leading to poor academic performance was supported by Baloglu (2002) who argued that two (interference and deficit) theories address students‟ test anxiety. Another way teachers can deal with test anxiety, particularly the skills deficit component, is to directly teach study skills and test taking strategies in the classroom. Creating a learning-focused classroom environment that incorporates varied assessment would help teachers determine whether students are relating course materials to contents (Supon, 2004; Conderman and Pedersen, 2010).

Significant study strategies and test taking skills can be beneficial for test anxious students to increase their confidence in test-taking, improve their performance, and reduce test anxiety. Test anxiety reduction strategies may be channelled toward mitigating interfering thoughts before, during and after test, and also installing coping methods that will combat adverse consequences of negative thoughts. Students can be helped through improving their study and test taking skills, improving academic self-concept or more individual subject-specific tuition. This view is supported by Whitaker Sena, Lowe, and Lee (2007) and Holzer, et al (2009) who argued that test taking skill reduces the debilitating effects of test anxiety. Furthermore, teachers should teach students to work on easier test items first so they can build their confidence. Students can improve test performance by learning to budget their time (Denstaedt, et al 2009; Strichart and Mangrum, 2010). In addition, students should be helped to learn test-taking strategies for answering specific types of questions, such as multiple-

choice, matching, true-false, sentence completion, and essay questions (Salend, 2009; Conderman and Pedersen, 2010; Leininger, et al, 2010). Conderman and Pedersen (2010) opined the use of mnemonics as a strategy to help students remember and implement series of test-taking skills.

Another issue which came up during the interview was on objectivity in the scoring process 3(12%) of the teachers complained about scoring subjectivity. The lack of preparation for the test and inefficient test preparation are other reasons that make the learners anxious. A teacher explained by saying:

> *Teachers should inform students of the aim of the test, content, test techniques and number of the questions before administration. Teachers should give clear explanations and sample questions for the test items designed in different test techniques. A trial version of a test can be administered or given to the learners before it is applied.* [20/1/12]

These are problems confronting students which teachers have to help resolve. In this direction, instructional supervision and support structures need to be effectively managed. A good test has a uniform system of administration, scoring and interpreting.

Another theme which emerged was creating a stress-free environment for students to concentrate on the test. 6(24%) of teachers declared their support for a stress-free and relaxed atmosphere to overcome test anxiety. Apparently, feeling of panic (affective) and worry (cognitive) anxieties are common symptom of students‟ test anxiety. Effective time management was fundamental to mitigating test anxiety. This was the comment from two respondents:

Some students complain of huge pile of assignments on them during the examination period which should have been given earlier. This is coupled with tight examination timetable. They get confused as to whether to concentrate on the assignment or on the examination. A number of examinations were timetabled in short succession (two papers on the same day). Enough breathing space should be given to allow for adequate revision and rest. [5/2/12]

Students read the questions, write the answer dead quick, rush off to the next one without thinking deeply about questions or reading the questions properly. Again, facilities in the school should be improved to afford students places to sit and revise during examination. [5/2/12]

Teachers contribute to this pressure in several ways by setting deadlines for assessment at short intervals. This means managing one‟s time so that one can accomplish academic work as well as socialize and have fun. Teachers should encourage students to devote more time to school work or examination, set realistic goals and manage unwarranted distractions. This comment is consistent with the concept organization model of test anxiety theory propounded by Schutz, et al (2002) which claims that emotion regulation influences thoughts and feelings during examination.

On test validity and adequacy of time, 4(16%) of teachers proposed that teachers should give valid test that reflect content of course. Teachers should inform students on contents, test techniques, number of the items included in the test before the administration (Alcala, 2002). Test, apart from identifying strengths and weaknesses of students, invariably is a valuable tool for providing adequate information on each student. Another respondent said:

> *I do not think some teachers pre-test their questions to determine the time frame, because the time allotted for the test is woefully inadequate.* [11/03/12]

Consequently, stress and pressure were some of the themes which featured prominently in the interviews. Time pressure was related to the time limits associated with an examination - not finishing the examination in the allowed time. Therefore, for optimal performance, teachers should inculcate in their students good studying habits and testing-skills.

On teachers‟ attitude and friendly testing environment, 5(20%) of respondents maintained that negative comments from teachers affected students emotionally. It was established as a fact that teachers should avoid negative and unrelated comments during test. Putwain (2008) described this as fear appeals by teachers. Where students complain of teacher intimidation, negative comments and unfriendly testing, anxiety tends to build up during examination. This is reflected in a comment from one respondent:

> *It is very true that teachers' attitudes can put fear or calmness in students. If the teacher is insensitive to students' academic needs, it can paralyze their performance. Students go to the examination room thinking of how the paper will be marked instead of concentrating on the examination.* [11/2/12]

Teachers should act professionally to create conducive and non-threatening teaching- learning environment. It is important to appreciate students‟ concern in these demanding conditions which can generate negative consequences on their performance due to pressure on anxiety. Teachers need to understand the enhancing effects of test anxiety as well as its detrimental impact on performance.

Classroom tests offer students the opportunity to gain familiarity with particular types of question format and to receive feedback on their performance. Mock examinations build the confidence of students for test conditions.

> *… students write class test before the mock examination and there is no pressure whatsoever on them to get a good mark in that it only gives them the feel of it. Comparatively when it comes to high-stake examinations (WASSCE) students do feel tensed because there is pressure on them to perform well.* [15/02/12]

One respondent expressed how she would feel reassured if her teacher looked up at her and smiled. This degree of personal contact creates a relaxed learning environment.

Again, a friendly learning and testing condition raises the issue of scheduling class tests, assignments and examinations in the teaching-learning interface. Test anxiety makes students interested in tests and their results but not the contents of the courses. Furthermore, accessible and user-friendly tests contain clear, complete and good test directions. The language used in constructing the test items should be devoid of vague terms and irrelevant information to confuse and frustrate students or be misinterpreted by them (Brookhart and Nitko, 2008; Elliott et al, 2010).

4.3.4.1 Summary

In conclusion, it may be said that students need good study habits and effective test-taking skills and strategies (Whitaker Sena et al., 2007). In general, teachers welcomed the possibility of a greater emphasis on test taking skills to facilitate cognitive resources (achievement). These strategies can help students stay relaxed, focused, and motivated to succeed in tests. Again, objectivity in the scoring process emerged as a contributing factor in reducing test anxiety. It came out that a good test administration has a uniform scoring,

interpretation and the creation of a friendly learning environment. Accessible and user-friendly tests contain clear, complete and good test directions for students to understand the context and conditions associated with test questions. A stress-free and relaxed atmosphere was identified as another factor in reducing test anxiety. Finally, it emerged from the study that teachers‟ attitude and friendly testing environment create a conducive and non-threatening teaching-learning environment.

4.4 Section C– Testing of the study hypotheses

Before analyzing the data to answer the research hypotheses, it was deemed appropriate, to check the normality of the distribution. This was done in order to make sure that the data collected met the requirement of parametric test (i.e. normality). A normal distribution is a statistical distribution in which data are represented graphically by a symmetrical bell-shaped curve (Field, 2005). There are several ways to assess the normality of a distribution (e.g. Q.-Q plot, scatter plot, linearity, skewness etc). The researcher in this regard, assessed normality of the data by using the kolmogorov-smirnov test. Table 4:7 below illustrates the normality using the kolmogorov-smirnov test.

Table 4.6: Test of normality using kolmogorov-smirnov test

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Test Anxiety	0.162	255	0.000	0.901	255	0.000
Academic Performance	0.457	255	0.000	0.763	255	0.000
Students Attitude	0.684	255	0.000	0.776	255	0.000
Factors Causing Test Anxiety	0.549	255	0.000	0.652	255	0.000
Influence of test Anxiety on Academic performance Questionnaire	0.715	255	0.000	0.703	255	0.000

Lilliefors Significance Correction

The value of the significant column determines the normality effect of the data. According to Howell (2002), a significant value less or equal to 0.05 is considered good evidence that the data set is not normally distributed, a significant value of 0.000 indicate a perfect normality. The SPSS analysis produced two significant results, the first was for the Kolmogorov-Smirnov test, and the second was the Shapiro-Wilk's test. The advice from SPSS is to use the latter test when sample sizes are small ($n < 50$) (Howell, 2002).Since the sample size for this study was greater than 50 ($n=270 > 50$), the result from the Kolmogorov-Smirnov column which gave us a significant value of $p = 0.000$ was accepted and used. Test of normality using the Kolmosgorov – Smirnov test (see Appendix G).

4.4.1 Hypothesis one: There will be significant negative relationship between students‟ levels of test anxiety and their academic performance.

In order to test this hypothesis, Pearson Correlation coefficients (two – tailed) were conducted to establish the relationship between the levels of test anxiety and students academic performance. The results are presented in table 4.7.

Table 4.7: Correlation between Students‟ Test Anxiety Level and Academic Performance

Variable	1	2	3	4
1. Low Test Anxiety	**1**	**--**	**--**	**--**
2. Moderate Test Anxiety	**0.185****	**1**	**--**	**--**
3. High Test Anxiety	**0.212***	**0.196****	**1**	**--**
4. Academic Performance	**0.204****	**0.121****	**-0.312***	**1**

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

Table 4.7 showed a positive relationship between low and moderate test anxiety and academic performance($r = 0.204$) and ($r = 0.121$) with p at 0.01 significance level.

It, however registered a negative correlation between high test anxiety and academic performance ($r = -0.312$, $p = 0.05$). This relationship indicates that as students exhibit high test anxiety, they tend to perform poorly academically. Interestingly, low and moderate test anxiety tend to have a positive relationship with their academic performance indicating that such condition does not have much effects on students achievements in test.

4.4.2 Hypothesis Two: There will be significant effect of test anxiety on students‟ academic performance

Linear simple regression analysis was conducted to assess the effect of test anxiety on students‟ academic performance. In this analysis, academic performance was treated as the

dependent variable whereas students test anxiety was treated as independent variable. The results are shown in table 4.8.

Table 4.8: Forced entry regression of academic performance on test anxiety

Variables	b	Beta (β)	R	R^2	t	Sig.
Step 1						
Constant	104.32				2.413	0.002
Test Anxiety	-17.29	-0.158			1.896	0.012
			0.184	0.229		

In table 4.8, it can be inferred that students test anxiety had significant effect on students‟ academic performance (beta = - 0.158, t= 1.896 < p < 0.012). This indicates that test anxiety contributes negatively to academic performance. The model also predicted that for every unit increase in test anxiety, academic performance decreases by 17.29 units.

It can be noted that, the contribution of test anxiety in students‟ academic performance was 22.9 % (i.e., $R^2 = 0.229$). That is to say the amount of variation in the academic performance scores that was explained by the independent variable (test anxiety) was 22.9%. Thus, the study hypothesis was supported.

In general, the model predicts students‟ academic performance in the equation that emerges from the model. The equation of a simple linear regression is:

Y = a + b1x1, where Y is the value of the dependent variable (what is being predicted), a = constant, and b1 = slope (beta coefficient) for x1, where x1 is the independent variable (test

anxiety). Thus if a student test anxiety level is 3.6 that student‟s academic performance will be: Academic Performance = 104.32 + (-17.29) (3.6) = 104.32 – 62.24 = 42.1

4.4.3 Hypothesis Three: There will be significant difference in the level of test anxiety between male and female students.

To test this hypothesis, an independent samples t-test was conducted to compare their means. The test was meant to examine the mean difference in academic performance of males and females.

Table 4.9: Independent sample t-test of test anxiety levels of male and female students

Variable	M	SD	N	df	t	Sig.
Male	4.13	1.54	135	268	6.317	0.000
Female	2.49	0.87	135			

The results in table 4.9 indicate that there was significant difference in academic performance of male (M =4.33, SD =1.54) and female (M = 2.49, SD = 0.87), t = 6.317, df = 268, p = 0.000. These analyses provide evidence that female students were indeed more affected academically than males as far as their test anxiety levels are concerned.

The independence sample t-test identified significance difference, but did not recognize where the differences lay with regard to students‟ test anxiety levels. A closer examination of table 4.10 indicates that a large number of male students exhibited moderate levels of test anxiety (59, 43.7%), while a greater number of female students reported high levels of test anxiety

(86, 63.7%). This substantial difference in the levels of test anxiety is also observed between male and female students.

Table 4.10: Test Anxiety levels of students (male and female categories)

	Males‟	%	Females‟	%	Total	%
Low Test Anxiety	21	15.6	12	8.9	33	12.2
Moderate Test Anxiety	59	43.7	37	27.4	96	35.6
High Test Anxiety	55	40.7	86	63.7	141	52.2
Total	**135**	**100**	**135**	**100**	**270**	**100**

4.4.4 Hypothesis Four: There will be significant difference between the performance of male test anxious and female test anxious students.

To test this hypothesis, an independent sample t-test was conducted to compare their means. The test was meant to identify whether the mean for the academic performance of male test anxious and female test anxious students differ or not.

Table 4.11: Independent sample t-test of academic performance of test anxious male and female students

Variable	M	SD	N	df	t	Sig.
Male Test Anxious Students	2.93	0.78	55	139	-5.189	0.000
Female Test Anxious Students	4.03	1.73	86			

The results in table 4.11 indicate that there was significant difference between the performance of male test anxious students (M =2.93, SD =0.78) and female test anxious students (M = 4.03, SD = 1.73), t = - 5.189, df = 139, p = 0.000. This provides evidence that female test anxious students are much more affected than males as far as their academic performance is concerned.

4.4.5. Hypothesis Five: Test anxiety and students attitude towards learning will significantly contribute to students‟ academic performance

Multiple regression was conducted to determine the contribution of test anxiety and students‟ attitude towards learning. The results showed that both variables significantly predicted students‟ academic performance, t = 3.218, and p= 0.000. The beta weight of the predictor (attitude) suggests that test anxiety contributes much more to predicting students‟ academic performance. The adjusted R Square value was 0.319. This indicates that 31.9% of the variance in students‟ academic performance was explained by the model. According to Cohen (1988), this is a moderate effect.

In multiple regression, the model takes the form of equation that contains coefficient (b) for each predictor. This b- value indicates individual contribution of each predictor to the model. The b - value tells us the relationship between the outcome (students‟ academic performance) and each predictor. If the value is positive it indicates that there is a positive relationship between the predictor and outcome, whereas a negative coefficient represents a negative relationship. According to table 4.12, all the b -values of the predictors were negative, meaning that as test anxiety *t* and students‟ attitude increase, their academic performance decrease.

The Standardized regression coefficient (beta) gives a measure of the contribution of each variable to the model and also illustrates test anxiety (beta = 0.182, t = 2.623, p = 0.004), and students attitude (beta = 0.126, t= 1.489, p = 0.014). The large value of beta indicates that a unit change in this predictor variable has a large effect on the criterion variable. In this study, it appears that test anxiety explained the bulk of the variance in students‟ poor academic performance than their attitude to test The t- value and significant values give a rough indication of the impact of each predictor variable – a large absolute t-value and small p-value suggest that a predictor variable is having a large impact on the criterion variable. The t-values also show significant, at 0.05 levels, meaning that both (test anxiety and students attitude to test) significantly predict students‟ academic performance.

Table 4.12: Forced entry regression of test anxiety and students attitude toward examination on students academic performance

Variables	b	Beta (β)	R	R^2	t	Sig (t)
Step 1						
Constant	22.09				3.218	0.000
Test Anxiety	- 13.02	0.182			2.623	0.004
Students Attitudes	-9.08	0.126			1.489	0.014
			0.221	0.319		

Note. b=Regression coefficient, Beta= Standardized regression coefficient, R =Multiple Correlation Coefficient, R^2 = Adjusted R Square.

In general, the model predicts the academic performance in the equation that emerges from the model. The equation of a simple linear regression is:

Y = a + b1x1 + b2x2, where Y is the value of the dependent variable (what is being predicted), a = constant, and b1 = slope (beta coefficient) for x1, where x1 is the first independent variable (test anxiety), b2 = slope (beta coefficient) for x2, where x2 is the second independent variable (students‟ attitude). Thus if a student‟s test anxiety is 2.8, and attitude is 2.1, that student‟s academic performance will be:

Academic Performance (Y) = 22.09 + (13.02)(2.8) +(9.08)(2.1)

= 22.09 + 36.5 + 19.1 = **77.7**

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1. Introduction

This chapter focuses on discussion of the findings in relation to the research questions and hypotheses.

5.2. Research Question One: What is the level of test anxiety among students in Senior High Schools in the Agona Municipality?

As revealed by the results of this study, moderate level of test anxiety does exist among the third year Senior High School students who participated in this study. Moderate amounts of anxiety can facilitate performance. Again, moderate test anxious students endorsed feeling of confidence during the examination indicates that, students with moderate levels of test anxiety performed better. This study is consistent with Cassady and Johnson (2002), Vogel and Collins (2002) and Chapell et al (2005) who present evidence that moderate, but not low or high, level of anxiety are related to higher examination performance. According to (Abolghasemi cited in Eizadifard and Sepasi Ashtiani, 2010), moderate and effective anxiety motivate an individual to make appropriate and timely effort to achieve a goal in life.

Other studies, however, have failed to support these findings (Sarason, 1984; Hembree, 1988; Hong, 1999; Ollendick and Prins, 2000). Research has shown that moderate and high test anxious students suffer from lower self-worth or self-esteem and higher generalized anxiety (Hembree, 1998). Similarly, (Tang, 2005) found that students who have moderate to high anxiety showed less academic achievement than those who have low test anxiety. A situation whereby the level of students‟ test anxiety was at the moderate level does not augur well for effective academic performance. This finding was in consonance with the findings made in

previous studies (Horwitz and Young, 1991). This is evident by the number of students who experience anxiety and distress in their classes. It can therefore be concluded that test anxiety has a significant moderate negative correlation with the achievement of the students in this study.

5.3. Research Question Two: What are the provoking factors of test anxiety among Senior High School students in the Municipality?

Increased test anxiety levels among Senior High School students in the study can be attributed to a variety of factors. One common contributing factor identified in this study was the problem of study habits and test readiness skills. This result is in agreement with the conclusions made by researchers who put it more forcefully, asserting that poor study skills and habits contribute to students‟ poor performances under evaluative conditions (Hembree, 1988; Sharma, 2002; Supon, 2004; Casbarro, 2005; Cizek and Burg, 2006)

Again, the problem of study habits and test readiness skills support the study skills deficit model which postulates that test anxiety lies not in test taking but preparing for the test (Tobia, 1990; Klejin, et al, 1994). Some of the factors that cause test anxiety are related to lack of preparation for the tests, fear of negative evaluation, bad experiences on previous tests, time limitation and pressure, the number of items included in the test and the difficulty of course content.

These results are in line with Culler and Holahan (1980), Naveh-Benjamin, et al (1987) and Birenbaum (2007) who revealed that students have difficulties in organizing and retrieving information during examination or are unable to integrate content material. Not being able to learn may create a sense of anxiety, and ultimate dislike for examination.

5.4. Research Question Three: How does test anxiety influence students‟ level of academic achievement?

Data revealed that when students‟ attitude was controlled, test anxiety still contributed negatively to their academic performance. This finding is consistent with studies by researchers who revealed that test anxiety negatively correlated with academic performance (Cassady and Johnson, 2002; Abu- Rabia, 2004; Jing, 2007; Zoller Ben-Chain, 2007; Kassim, et al 2008; Putwain, 2008; Rezazadeh and Tavakoli, 2009; Putwain and Daniels, 2010). As postulated by Sarason (1975) interference model, students reported difficulties with concentration, distractibility and mental blocks, despite hours of exam preparation, which may be characterized with differential impact of worry and emotionality factors of test anxiety on performance (Hembree, 1988; Taylor and Quagraine, 1999; Cassady and Johnson, 2002; Part-Stamm, Gollwitzer and Oettingen, 2010). In addition to its negative effect on performance, test anxiety has implications for students‟ social and emotional functioning as well.

Researchers have argued that test anxiety correlate negatively with academic performance. Underlying mechanisms may be the detrimental effects of anxiety on achievements generating from cognitive, emotional and physical implications. Educational antecedents are high achievement expectancies and pressure for achievement by parents and teachers.

Wilson (2006) and Sila (2010) state that in extreme cases, students may think of cutting classes to avoid anxiety situations, causing them to be left behind. Therefore, it is important for teachers to understand the enhancing effect of test anxiety and its detrimental impact on performance. Consequently, how to reduce students‟ test anxiety becomes an important issue for teachers, counsellors and stakeholders in education. Given the fact that test anxiety can have detrimental influence on learning, it is extremely important that counsellors and teachers recognize that test anxiety has a debilitating effect on students‟ achievement test performance.

In this direction, it is important for counsellors and teachers to better intervene in cases where test anxiety is interfering with students academic performance.

5.5. Research Question Four: What can be done to reduce students‟ test anxiety?

To reduce students‟ test anxiety is important for teachers and counsellors. The answers to this question show that the teacher plays a pivotal role in reducing students‟ test anxiety.

In the first place, some of the factors that cause test anxiety are related to inappropriate test preparation, time limitation and negative comments giving rise to physical and psychological problems. It affects motivation, concentration, and increases errors during examination, creating problems of recalling material previously learned or recall prior learning. It is important for counsellors and teachers to acknowledge the existence of test anxiety and take initiatives for its effective reduction. However, considering the fact that much research indicate that adequate anxiety levels play a positive facilitative role in learning, therefore an optimal amount of anxiety is tolerable among students. This can be achieved by helping the students with effective techniques in preparing for examinations. Secondly, creating a stress free environment or a friendly classroom atmosphere allows students to concentrate on the test rather than being distracted by the test anxiety. They can also attempt to reduce anxiety by openly discussing its nature (Price, 1991).

Thirdly, teachers should avoid negative comments during tests and should not frequently remind them of time left. In addition students should be given enough time to complete the test. They should avoid negative and unrelated comments during tests, give valid tests and enough time to answer questions (Putwain, 2008; Nonis and Hudson, 2010). Price (1991) suggests that teachers could reduce students' anxiety by encouraging them to make mistakes in the class. Price further argues that instructional guidance should be clear to facilitate understanding.

The strategies which can be contextually relevant and useful for teachers can be; task orientation and preparation, positive thinking, seeking social support, avoidance, relaxation training, guided imagery, self-instructional training, establishing purpose, affirmation, modalities, positive anchors, mental simulations, use of humour, preparation and study skills training.

5.6. Hypothesis one: There will be significant negative relationship between students‟ levels of test anxiety and their academic performance.

The results of this study show that test anxiety has a significant moderate negative correlation with the achievement of the students in this study. Therefore, it can be said that anxiety plays a debilitative role in learning. Horwitz et al. (1986) also found a significant negative correlation between moderate test anxiety scores and students' final examination grades and attributed students‟ performance to the parental expectations. They further reported that highly test-anxious students sometimes attribute learning acquisition difficulties to low intelligence.

Many researchers found that a moderate relationship between test anxiety and academic achievement (e.g. Cassady, 2004; Cassady, etal, 2004; Chapell, et al, 2005; Kassim, et al, 2008; Putwain 2008b). Campbell and Ortiz (1991) investigated test anxiety among university students to be „alarming‟ and estimated that up to half of all students experience debilitating effects of test anxiety. Again, debilitating anxiety causes learners to assume an avoidance attitude and therefore escape from the learning task. High levels of anxiety can discourage students from participating in classroom activities or studying at home, and may even cause them to lose their self-confidence and motivation in learning. All these negative factors can influence their efforts to learn and can cause them to perform poorly under evaluative

conditions. Cassady and Johnson (2002) and Jing (2007) are among researchers who confirmed that test anxiety is negatively correlated with academic performance.

5.7. Hypothesis Two: There will be significant effect of test anxiety on students‟ academic performance

Simple linear regression was used to test this hypothesis and it was found that test anxiety contribute negatively to students academic performance meaning that as students‟ test anxiety increases, their academic performance decline. This revelation supports Johnson‟s (1997) findings that as students experience test anxiety, their academic performance decline that lead to school dropout. Furthermore, significant negative relationship was found between test anxiety and academic performance which might have contributed to students‟ lower grades. These findings are consistent with the earlier research findings of Zoller and Ben-Chain (2007) and Kassim, Hanafi and Hancock (2008). Sarason (1984) argues that test anxiety is a major devastating factor for all academic performance from the elementary level to the university level. This view is also supported by the findings of Mohammed and Mathieu (2004) and Cassady (2004) which suggest that test anxiety is one of the variables that are most commonly related to poor performance among students.

Denscome (2000) and Putwain (2007) also claimed that test anxiety leads to consequences or thoughts of failing; low self esteem and fear appeals by teachers are feelings of unworthiness and depression which have an adverse effect on academic achievement. Therefore, there is the need to overcome these negative sentiments like ego-weakness, guilt proneness, frustration and tension among students. Again, test anxiety could have debilitating effects on achievements generating cognitive, emotional and physiological implications

5.8. Hypothesis Three: There will be significant difference in the level of test anxiety between male and female students.

The results of this study indicate that there is a significance difference between the academic performance of students (boys and girls) and their test anxiety. The findings indicated that while boys experienced moderate level of test anxiety; girls experienced high level of test anxiety. The result is consistent with earlier findings that showed that females reported higher test anxiety levels as compared to males (Keeves, 1985; Hambree 1998; Cssady and Johnson, 2002; Chapell et al., 2005; Egbochuku and Obodo, 2005; Kayapınar, 2007; Soffer, 2008; Rezazadeh and Tavakoli, 2009). The findings are also supported by a study of Cizek and Burg (2006) and Wren and Benson (2004), which showed that female have higher test anxiety levels compared to males. However, it contradicted with the findings of Yenilmez and Ozbey (2006) who found no significant difference in the anxiety levels in terms of gender variable. These findings demonstrated that females reported higher levels of test anxiety merely due to heightened levels of emotionality experienced by females. Females tend to express their emotions more than males and more often perceive situations as threatening. The results are consistent with the interference, deficit, concept organization and cognitive appraisal models of test anxiety (Schutz et al, 2002; Cassady, 2004; Birenbaum, 2007).

Differences in psychological characteristics between girls and boys may be related to socio-cultural factors. This may be because admitting a fearful state by girls is more acceptable than by boys (Harris, 1983) due to the fact that girls reported fears more frequently. This fear may equally increase anxiety in both male and female students.This could be explained by the fact that everybody fears examination despite their gender and that everyone would like to do well. This fear may equally increase anxiety in both male and female students. Students who

are not adequately prepared for a test and care about doing well are likely to experience test anxiety. This can apply to both boys and girls.

Consequently, the female students often tend to experience higher level of test anxiety compared to males; probably because of feelings of insecurity and threat to their self-esteem posed by the examinations and evaluation for achievement of higher laurels.

Soffer, (2008) emphasized that students who are not adequately prepared for a test and care about doing well are likely to experience high test anxiety. No wonder that, the study revealed significant negative relationship between high test anxiety and academic performance. This finding is supported by previous studies which have shown that high test anxiety affects academic performance (Convington and Omelich, 1987; Hembree, 1988; Taylor and Quaigraine, 1999; Hagtvet and Sipos, 2004; Chapell et al., 2005; Rezazadeh and Tavakoli, 2009).

Linear regression showed that excessive anxiety has a detrimental effect on individual‟s performance. The results led to the conclusion that academic performance to a large extent depends on test anxiety.

5.9. Hypothesis Four: There will be significant difference between the performance of male test anxious and female test anxious students.

Independent sample t-test revealed that female test anxious students were indeed more affected compared to male test anxious students. The results of the study are in conformity with the results obtained by Bharati (1993) who reported that boys view their performance as being informative about their abilities and thus excel in their studies than girls. Results of the study conducted by Vijayalaxmi and Natesan (1992) and Pomernatz *et al.* (2002) reported that boys had a higher mean academic achievement than girls.

This finding was in agreement with previous studies conducted by Roberts (1991), Putwain (2008) and Bodas, et al (2008) who found out that, girls easily show their emotions publicly whiles boys hold back their emotions. Cassady and Johnson (2002) explained that boys and girls feel the same level of cognitive test anxiety, but girls have higher levels of emotionality while Yenilmez and Ozbey (2006) found no differences between male test anxious and female test anxious students. This may be due to the fact that boys are hereditarily prone to mature early. Therefore they develop the tendency of high exploration and commitment in the day to day activities and they are less prone to conflicting situations and ideas. As a result boys are less prone to the development of anxiety.

Contrarily, Vijayalaxmi and Natesan (1992) observed that girls were lower than boys in relation to their lack of self sentiment development, ego-weakness, guilt proneness, frustration and tension which are related to anxiety.

According to Sarason, Sarason and Pierce (1996), anxious students often encounter cognitive interference especially when a given situation is seen as difficult, challenging and threatening. Undoubtedly, it is the cognitive dimension that mostly ignites the physiological and emotional reaction.

5.10 Hypothesis Five: Test anxiety and students attitude towards learning will significantly contribute to students‟ low academic performance

Multiple regression showed that test anxiety has a detrimental effect on individual‟s performance than the students‟ attitude in examination (Sarason, 1995). The results led to the conclusion that students academic performance to a large extent depend on test anxiety. Putwain (2007) made a similar study consistent with the conclusion that worry, emotionality, gender, and socio-economic background were significant predictors of test anxiety.

Sarason (1995) further pointed out that test anxiety made students feel less confident, more anxious and more worried. Vijayalaxmi and Natesan (1992) on the other hand, argue that test anxiety decreases at higher grades and students who have higher scores are less anxious than those with lower scores. They further emphasized that test anxiety leads to low level proficiency of the learners and fear of negative evaluation and bad experiences on tests.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1. Introduction

The current study attempted to examine the effects of test anxiety on academic achievement of third year Senior High School students in the Agona Municipality using both quantitative and qualitative measures. This chapter presents the summary of the study and conclusions drawn from the results. It provides recommendations based on the present findings, addresses the implications for school counselling, suggestions for further studies and ends by addressing the study limitations.

6.2. Summary of findings

The following were the findings of the study:

- The findings indicated a moderate level of students‟ test anxiety.
- Both teachers and students have similar line of perception that, poor study habit is a factor causing students‟ test anxiety.
- Test anxiety contributes negatively to academic performance.
- Male students‟ exhibit moderate level of test anxiety whiles greater number of female students‟ exhibit high test anxiety.
- Female test anxious students reported significant higher test anxiety levels as compared to male students.
- Test anxiety contributes negatively to academic performance when students‟ attitude is controlled.

6.3. Conclusions

On the basis of the findings of the study the following conclusions can be drawn:

- Students experience high test anxiety before they write their examinations and it is detrimental to their academic performance.
- Test anxiety may not be one of the factors that contribute significantly to poor academic performance.
- Students who exhibit low test anxiety perform better.
- Anxiety coping strategies are not appropriately used to minimize test anxiety among students. If appropriately used, these strategies can greatly reduce test anxiety among students.
- Test anxiety affects both boys and girls therefore; anxiety reduction strategies should target both sexes.
- Helping students with effective techniques in preparing for examinations serve as a good strategy in reducing the factors that contribute to test anxiety among students.
- There is a significant negative relationship between test anxiety level and academic performance among students generating cognitive, emotional and physiological implications.

6.4 Recommendations

Based on the findings and conclusions, the following recommendations were made.

The Ghana Education Service should strengthen guidance and counselling in Ghanaian schools. Every school should have a functional counselling centre fully staffed by qualified counsellors with a view to adequately address various psycho-social problems.

Moreover, the Guidance and Counselling Unit of the Ghana Education Service should mount regular workshops for teachers to develop specific anxiety reduction techniques such as relaxation therapy, systematic desensitization, visualization, thought stopping and deep breathing exercises that best suit their students.

Also, school authorities should make an effort to organize regular counselling workshops for students to boost their confidence and motivation. In these workshops students can be educated to set realistic goals to reduce stress related anxiety through self-monitoring in the use of time, proper scheduling of task-goals and the development of self-assertion to manage unwarranted distractions.

As evidenced in the study that test anxiety contributes negatively to academic performance, teachers should create an environment that is relaxed and stress free for students to concentrate on the test rather than being distracted by interfering thoughts which prevent them from tackling examination appropriately. Teachers, should also adopt problem solving methods in teaching to encourage test-anxious students apply their cognitive and meta-cognitive strategies to solve problems.

Teachers should also instill coping strategies in students to combat adverse consequences of interfering thoughts. To offset this imbalance, comprehensive orientation programme for fresh students on study skills acquisition, friendly learning and testing environment.

6.4.1 Author‟s proposal on strategies to reducing test anxiety among students has been presented in (see Appendix H) page 150 of the work.

6.5 Implications for School Counsellors

The findings and discussion is a pointer to the fact that students need direction, support and guidance to be able to overcome the disabling effects of test anxiety. Test anxiety is seen as a silent construct easily overlooked by teachers and parents. It is important to understand the causes, correlates, and outcomes of test anxiety, especially during an era of education policy when decisions are often based upon students‟ performance on standardized tests.

Students whose performance is decreased because of test anxiety may not be properly identified in the school setting. Educational antecedents are high achievement expectancies and pressure for achievement by parents and teachers, competition within classrooms, negative achievement feedback, and punishment after failure.

Again, the findings have implications for helping professionals and academia in addressing test anxiety among students so that timely and effective counselling and therapeutic interventions could be introduced in schools, colleges and universities. This makes screening for test anxiety relevant for counsellors to better intervene in cases where test anxiety is interfering with students‟ academic performance.

Additionally, test anxious students are highly likely to be experiencing other more generalized symptoms of anxiety and depression. (Hembree, 1988; Turner, et al 1993; Weems et al., 2010). Some academic under achievements are best handled through psychological therapy. Psychological tests are therefore needed to make the therapy potent and result oriented.

Early identification of highly test-anxious students is difficult, as test responses may not manifest until high stakes examinations (such as WASSCE). Also, managing anxiety is a challenging task that requires team effort of teachers, counsellors and parents to be actively involved in reducing test anxiety.

Finally, test taking which often throws students off their emotional balance indicates that they see it as an opportunity to prove their capability and self-worth. Anxiety-reduction techniques alone hardly ever resolve the problems of anxiety and consequential improvement of academic performance. It needs to be effectively combined with the acquisition and internalization of effective study skills and test-taking skills.

6.6 Suggestion(s) for Further Research

Further research is suggested to deal with family process risk factors that impact on test anxiety as well as research that would lead to improving test anxiety interventions between comparison groups.

6.7 Limitations of the Study

Several factors limited the study. The sample size was adequate for the study, but it could provide a richer view of students, if expanded to a study of students across all grade level (SH1 – SH4). Replication with larger sample is required for future directions. The study was limited to third year students which cannot be the benchmark for the generalization of the results.

In the study, the views of headmasters, counsellors and parents were not sought. It is believed that if their views were sought, it would have added more inputs to the results. Again, students who fail in examination were not added. If they were targeted, it would have enriched the existing findings. In retrospect, it would have been useful to have the participants to complete a post-examination questionnaire inquiring about students‟ examination experience.

The study was limited to five public schools and subject variables. As an insider researcher, time constraint posed much challenge to widen the scope of the study. Notwithstanding, these limitations did not negate the research and its findings.

REFERENCES

Abu-Rabia, S. (2004). Teachers‟ role, learners‟ gender differences, and FL anxiety among seventh-grade students studying English as an FL. *Educational Psychology, 5*, 711-721. doi: 10.1080/0144341042000263006.

Adesemowo, P.O. (2005). Premium on affective education: Panacea for scholastic malfunctioning and aberration. 34th Inaugural Lecture, Olabisi Onabanjo University, Ago-Iwoye. Nigeria.

Adeyemo, D. A. 2007. Moderating influence of emotional intelligence on the link between self- efficacy and achievement of University students. *Psychology and Developing Society, 19(2)*.

Aida Y (1994) Examination of Horwitz, Horwitz and Coe‟s construct of foreign language anxiety: The case of students of Japanese. The Modern Language J. 78, 155-168.

Akinade, E.A. & Owolabi, T. (2009). *Research Methods: for Social Sciences, Behavioural Sciences and Education.*Connel Publications: Nigeria.

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

Alcala, F.R. (2002). Making oral test more human and less anxiety generating. *Humanising Language Teaching.* 4(4) 1-3.

Alpert, R. & Haber, R. (1960). Anxiety in academic achievement situations. *Journal of Abnormal and Social Psychology, 61*, 207-215.

Alto, CA: *Consulting Psychologists Press*.

Akban, S. T., & Ogundokun, M. O. (2006). Effectiveness of Self-Efficacy Strategies as Method of Reducing Test Anxiety of Student Nurses in Ogbomoso North Local Government

Amoani, F.K., (2005). *Research Methodology: An Overview. Winneba*: University of Education. Analogies Test. *Journal of Educational psychology.69,191-195.*

Aremu, A. O. (2000). Academic performance 5-factor inventory. Ibadan: Stirling-Horden Publishers Nigeria Ltd.

Austin, J.S., P., E., Bitner, J., & Wadlington, E. (1995). *Prevent school failure: Treat test anxiety*. Preventing School Failure, 40, 10-13.

Baloglu, M. (2002). Construct and concurrent validity and internal consistency, splithalf, and parallelmodel reliability of the revised mathematics anxiety rating scale. Unpublished doctoral dissertation, Texas A&M UniversityCommerce. Texas, College Station, TX.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*, 122-127.

Bandura, A. (1995). *Self-efficacy in changing societies*. New York: Cambridge University Press.

Bandura, A. (1997). *Self-efficacy: The exercise of control. New York*: Freeman.

Benjamin, M., McKeachie, W. J., & Lin, Y. (1987). Two types of test-anxious students: Support for an information processing model. *Journal of Educational Psychology, 79*, 131-136. doi: 10.1037/0022-0663.79.2.131.

Bharathi, M., 1993, Creativity and its relation with intelligence, academic achievement and socio-personal factors among Navodaya Vidyalaya students. M.Sc.(Agri.) *Thesis*, Univ. Agric. Sci., Dharwad (India)

Birenbaum, M. (2007). What should be improved and what is high-level performance? Diagnostic assessment of mathematics achievement in TIMSS-R of Israeli and Singaporean eighth graders. Megamot, 44, 655-672.

Bodas, J., Ollendick, T. H & Sovani, A.V. (2008). Test anxiety in India children: A cross-cultural perspective. *Anxiety, stress, and coping, 21(4),* 387-404.

Borg, W., Gall, J., & Gall, M. (1993). *Applying educational research: A practical guide.* (3rd ed.). New York: Longman.

Brookhart, S. M., & Nitko, A. J. (2008). *Assessment and grading in classrooms.* Columbus, OH: Merrill/Pearson Education.

Brown, H.D. (1994). *Teaching by principles: an Interactive approach to Language Pedagogy.* Englewood Cliffs, NJ: Prentice Hall Regents.

Bryman, A. (2000) Social Research Methods. Oxford: Oxford University Press.

Bryman, E. & Bell, A. (2003). Business research methods. Oxford University Press.

Burns, D.J. (2006). Anxiety at the time of the final exams: Relationship with expectations and performance. *Journal of Education for Business,* 80 (2), 199-124. C. S. Dweck (Eds.), Handbook of competence and motivation (pp. 52–72). London: Guildford Press.

Campbell, C., & Ortiz, J. (1991) „Helping students overcome foreign language anxiety: a foreign language anxiety workshop", in Horwitz, E. K., & Young, D.J. (Eds.) *Language Anxiety: From Theory and Research to Classroom Implications*. Englewood Cliffs, NJ: Prentice Hall, pp. 153 168.

Chapell, M. S.; Blanding, Z. B.; Silvester, M.E., Takahashi, M.N. B., Gubi, A. and McCainn, N., (2005). Test anxiety and academic performance in undergraduate and graduate students. *Journal of Educational Psychology, 97*, 268-274.

Casado, M. A., & Dereshiwsky, M. I. (2001). Foreign language anxiety of university students. *College Student Journal, 35,* 539-551.

Casbarro, J. (2005). *Test anxiety and what you can do about it: A practical guide for teachers, parents, and kids.* Port Chester, N.Y: Dude Publishing.

Cassady, J. C. (Ed.). (2010). *Anxiety in schools: The causes, consequences, and solutions for academic anxieties*. New York: Peter Lang.

Cassady, J.C. (2004). The impact of cognitive test anxiety on test comprehension and recall in the absence of external evaluative pressure. *Applied Cognitive Psychology, 18,* 311-315.

Cassady, J.C. (2004). The Influence of Cognitive Test Anxiety across the learning-Testing Cycle. *Elsevier,* vol. 14, No. 6, 569-592.

Cassady, J. C. (2004a). The impact of cognitive test anxiety on text comprehension and recall in the absence of external evaluative pressure. *Applied Cognitive Psychology, 18*, 311-324. doi: 10.1002/acp.968.

Cassady, J.C., & Johnson, R.E. (2002). Cognitive test anxiety and academic performance. *Contemporary Educational Psychology, 27,* 270-295.

Cassady, J.C., Mohammed, A. & Mathieu, L. (2004). Cross-cultural differences in test anxiety: Women in Kuwait and United States. *Journal of Cross-Cultural Psychology, 35(6),* 715-718.

Cheek, J.R. (2002). An intervention for helping elementary students reduce test anxiety. *Professional School Counseling*, *6*(2), 162- 164.

Cheek, J. R., Bradley, L. J., & Reynolds, J. (2002). An intervention for helping elementary students reduce test anxiety. *Professional School Counseling,* 6(2), 162-164.

Chen, D. Y. C. & Wu, G. C. (2004). A Study of Foreign Language Anxiety of EFL Elementary School Students in Taipei County, *Journal of National Taipei Teachers College,* 17(2), 287-320.

Chouinard, R., & Karsenti, T. (2005). Commitment of high school students to mathematics: A question of expectancy, value and social support. Paper presented at the Biennial Meeting of the European Association of Research on Learning and Instruction, Nicosia: Cyprus.

Cizek, G. J., & Burg, S. S. (2006). *Addressing test anxiety in a high-stakes environment*. Thousand Oaks, CA: Corwin Press.

Collins, L. (1999). *Effective strategies for dealing with test anxiety* (ED 42-6214). Education Department, Educational Research and Improvement Office. Washington, DC: Government Printing Office.

Conderman, G., & Pedersen, T. (2010). Pre - paring students with mild disabilities for taking state and district tests. *Intervention in School and Clinic, 45,* 232–241. doi:10.1177/1053451209353446.

Connolly, S., Simpson, D., & Petty, C. (2006). Anxiety Disorders. New York: Chelsea House Publishers. Contemporary Educational Psychology, 15(1), 64–74.

Convington, M.C., & Omelich, C. (1987).Task-oriented versus competitive learning structure: Motivation and performance consequences: *Journal of Educational Psychology*, 76, 1098-1050.

Creswell, J. W (2003): *Research Design: Qualitative, Quantitative and Mixed Methods,* 3rd edition, Sage Publications.

Creswell, J.W. (2002). *Educational research: Planning, conducting, and evaluating quantitative and qualitative approaches to research.* Upper Saddle River, NJ: Merrill / Pearson Education.

Creswell, J.W. (2005). *Educational research planning, conducting and evaluating quantitative and qualitative research.* Canada: Pearson & Merril Prentices Hall.

Creswell, J.W., Clark, V.L., Gutmann, M.L., & Hanson, W.E. (2003). Advanced mixed methods research designs. In A. Tashakkori & C. Teddle (Eds.), *Handbook of mixed methods in the social & behavioural science (pp. 209-240).* Thousand Oaks, CA: Sage Publications.

Creswell, J.W. (2009). Mapping the field of mixed method. *Journal of Mixed Methods Research, 3,* 95-108.

Cubuku. F. (2007). „Foreign Language Anxiety". Iranian Journal of Language Studies, Vol 1(2) pp 133-142. http://ijols.znu.ac/volumes1issue2/cubuku1.pdf.

Culler, R. & Halahan, C. (1980). Test anxiety and academic performance: the effects of study- related behaviours: *Journal of Educational Psychology* 72, 16-20.

Day, V., Mensink, D., & O"Sullivan, M. (2000). Patterns of academic procrastination. *Journal of College Reading and Learning, 30*, 120-134.

Deffenbacher, J.L. (1978). Worry ,emotionality & task- generated interference in test anxiety: An empirical test of attentional theory. *Journal of Educational Psychology.70.248 254.*

Denscombe, M. (2000). Social conditions for stress. *British Educational Research Journal, 26*(3), 259–374.

Denstaedt, L., Kelly, J. C., & Kryza, K. (2009). *Winning strategies for test taking, grades 3–8: A practical guide for teaching test preparation.* Thousand Oaks, CA: Corwin Press.

Desoete, A. 2008. Do birth order, family size and gender affect arithmetic in elementary school? *Electronic Journal of Research in Educational Psychology*, *6(1)*.

Dewitte, S., & Schouwenburg, H. (2002). Procrastination, temptations, and incentives: The struggle between the present and the future in procrastinators and the punctual. *European Journal of Personality, 16,* 469–489.

Dorney, Z. (2005). Individual differences in second language acquisition. Lawrence Erbauwen Associates.

Egbochuku E. O. & Obodo B. O (2005). Effects of systematic desensitization therapy on the reduction of test anxiety among adolescents in Nigerain schools. J Instruct Psychol, 32: 298-304.

Eizadi Fard, R. & Sepasi Ashtiani, (2010). Effectiveness of cognitive behavioural therapy with problem solving skills training on reduction of test symptoms. *Journal of Behavioural Sciences,* Vol. 4, No. 1, 23-27

Elliot, A.J., & McGregor, H.A. (1999). Test anxiety and the hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology, 76*, 628-644.

Elliott, S. M., Kettler, R. J., Beddow, P. A., Kurz, A., Compton, E., McGrath, D.,.. Roach, A.T. (2010). Effects of using modified items to students with persistent academic difficulties. *Exceptional Children, 76,* 475–495.

Elvers, G., Polzella, D., & Graetz, K. (2003). Procrastination in online courses: Performance and attitudinal differences. *Teaching of Psychology, 30*, 159-162.

Eman, S., & Farooqi, N.Y. (2005). *Gender differences in test anxiety and level of examination stress among master's students.* Unpublished Masters Thesis Department of Applied Psychology, University of the Punjab, Lahore, Pakistan.

Ergene, T. (2003). Effective interventions on test anxiety reduction: A meta-analysis. *School Psychology International, 24,*(3), 313-328).

Erzberger, C., & Kelle, U. (2003). Making inferences in mixed methods: the rules of integration. In A. Tashakkori & C. Teddle (Eds.). *Handbook of mixed methods in*

social & behavioural sciences (pp. 457-490). Thousand Oaks, CA: Sage Publications.

Everson, H. T., & Millsap, R. E. (1991). Isolating gender differences in test anxiety: A confirmatory factor analysis of the test anxiety inventory. *Educational and Psychological Measurement, 51*(1), 243-251. Retrieved August 4, 2009, from http://www. Books. google. com

Eysenck, M. W., Santos, R., Derekeshan, N., & Calvo, M. G. (2007). Anxiety and cognitive performance: Attentional control theory. *Emotion*, *7*(2), 336–353. doi:10.1037/1528-3542.7.2.336.

Eysenck, M.W. (2001). *Principles of Cognitive Psychology.* Hove, East Sussex: Psychology Press.

Field, A. (2005). *Discovering Statistics Using SPSS .(2nd ed.).* London: Sage.

Flannery, M.E. (2008). Breath…Breath…Release. *NEA Today*, 42- 43.

Folin, O., Denis, W., & Smillie, W. G. (1914). Some observations on "emotional glycosuria" in man. *Journal of Biological Chemistry, 17,* 519-520.

Foddy, M. (2001). *Constructing questions for interviews and questionnaires: theory and practice in social research.* United Kingdom: Cambridge.

Foxman, P. (2004). The Worried Child. Alameda CA: Hunter House Publishers.

Freud, S. (1959). The justification for detaching from neurasthenia a particular syndrome. The anxiety neurosis. In *Sigmund Freud: collected papers* (Vol. 1, pp. 76-106). New York: Basic Books.

Fritzsche, B.A., Young, B.R., & Hickson, K.C. (2003). Individual differences in academic procrastination tendency and writing success. *Personality and Individual Differences, 35*,

Gaudry, E., & Spielberger, C. (1971). Anxiety and educational achievement. New York: Wiley.

Goonan, B. (2003). Overcoming test anxiety: giving students the ability to show what they know. Reproductions supplied by EDRS 257271.

Grau, R., Salanova, M. & Peiro, J. M. (2001).moderator effects of self-efficacy on occupational stress . *psychology in Spain, 5(1),* 63-74.

Green, J. C., Caracelli, V. J. & Graham, W.F. (1989). Towards conceptual framework for mixed- method evaluation designs. *Educational Evaluation and Policy Analysis, 11*, (3, 255274).

Hagtvet, K. A. (1983). A construct validation of test anxiety: A discriminant validation of fear of failure, worry and emotionality. In H.M. Vande Loeg, R. Schwarzer, & C. D. Speilberger (Eds.). Advances in test anxiety research (Vol.2). Lisse, The Netherlands: Swets & Zeitlinger.

Hagtvet, K. A., & Benson, J. (1997). The motive to avoid failure and test anxiety responses: Empirical support for integration of two research traditions. Anxiety, Stress, and Coping, 10, 35 57.

Hagtvet, K. A., & Sipos, K. (2004). Measuring anxiety by ordered categorical items in data with subgroup structure: The case of the Hungarian version of the trait anxiety scale

of the state-trait anxiety inventory for children (STAIC-H). Anxiety, Stress and Coping, 17, 49-67.

Hancock, D.R. (2001). Effects of test anxiety and evaluative threat on students‟ achievement and motivation. *The Journal of Educational Research, 94*(5), 284-290. Retrieved June13,2005, from Education Full Text database.

Harris, E. L., 1983. Family study of agoraphobia report of a pilot study. Archives of General Psychiatry, 40, 1061-1064.

Hembree, R. (1988). Correlates, causes, effects, and treatments of the test anxiety. *Review of Educational Research, 58*, 47-77.

Hill, K. & Wigfield, A. (1984). Test anxiety: a major educational problem and what can be done about it. *The Elementary School Journal, 85,* 105-126.

Hill, K.T. (1984). Debilitating motivation and testing: A major educational problem, possible solutions, and policy applications. In P. Ames & C. Ames (Eds.). *Research on Motivation in Education: Student Motivation (245-274).* New York: Academic Press.

Holzer, M. F., Madaus, J. W., Bray, M. A., & Kehle, T. J. (2009). The test-taking strategy intervention for college students with learning disabilities. *Learning Disabilities Research and Practice, 24,* 44–56. doi: 10.1111/j.1540-5826.2008.01276.x

Hong, E. (1999). Test anxiety, perceived test difficulty, and test performance: Temporal patterns of their effects. *Learning and Individual Differences, 11*, 431-447.

Horwitz, E. K. & Hortwitz, M.B. & Cope, J.A. (1986). Foreign language classroom anxiety. In E.K. Hortwitz & D.J. Young (Eds.), *language Anxiety: From Theory and research to Classroom Implications*. Englewood Cliffs, NJ: Prentice Hall.

Horwitz, E.K., & Young, D. J. (1991) *Language Anxiety: From Theory and Research to Classroom Implications.* Englewood Cliffs, NJ: Prentice Hall.

Howell D.C. (2002). *Statistical methods for psychology* (5th ed.). new York: Holt, Rinehart and Winston.

Huberty, T. (2009). Test performance anxiety. Principle Leadership, 1(10), 15-19.

Huberty, T.J. (2010). Test and performance anxiety. *The Education Digest*, 34-38.

Hughes, B.M. (2005). Study, examination, and stress: Blood pressure assessments in college students. *Educational Review, 57*, 21-36.

Jackson, J. (2001). Combating dead air case discussion. In H. Klein (Eds.), complex demands on teaching require innovation. Case method and other techniques. World Association for Case Method Research and Application: Boston, pp.227-240.

Jing, H. (2007). Analysis on the relationship among test anxiety, self-concept and academic competency. *US-China Foreign Languages, 5(1),* 48-51).

Journal of National Taipei Teachers College, 17 (2), 287 – 320.

Johnson, E. (1997). *Cultural norms affect oral communication in the classroom. In D. L. Sigsbee, B. W. Speck, & B. Maylath (Eds.), Approaches to teaching non-native English speakers across the curriculum (New Directions in Teaching and Learning No. 70) (*pp. 47 52). San Francisco: Jossey-Bass.

Johnson, L.E. (2007). Treating test anxiety in students with learning difficulties: An exploratory study. Unpublished doctoral dissertation, Florida State University, Tallahassee, FL.

Kaplan, R.M., McCordick, S.M.,& Twitchell, M. (1979). Is it the cognitive or the behavioural component which makes cognitive- behavior modification effective in test anxiety? *Journal of Counselling Psychology.26, 371 -377.*

Kassim, M. A., Hanafi, R. M., & Hancock, D. R. (2008). Test anxiety and its consequences on academic performance among university students. *Advance in Psychology Research.* 53,

Kayapınar, E. (2007). Research into anxiety level of the 8th grades students at primary schools preparing for secondary school student selection and placement examination (The sample of Afyonkarahisar city). MA Thesis. Afyonkarahisar Kocatepe University, Afyonkarahisar.

Keeves, J., 1985. Sex differences in ability and achievement. The International Encyclopedia of Educational Research and Studies. Oxford: Pergamon Press.

Keogh, B. K. (2004). Temperament in the classroom. Baltimore, M.A: Paul Brookes.

Kennedy, D. V., & Doepke, K. J. (1999). Multicomponent treatment of a test anxious college student. *Education and Treatment of Children, 22*(2), 203-217. Retrieved June, 13, 2005, from Education Full Test database.

Kirk, K., & Hollandsworth, J. G. (1978). Test anxiety, study skills, and academic performances. Journal of College student Personality.

King, P.E, &. Bennie, R. R. (2000) *Effects of Communication Load, Affect, and Anxiety on the Performance of Information Processing Tasks.* Communication Quarterly. Winter, 48, No.1. Retrieved on line on March 3, 2003 from: http://www.jmu.edu/orgs/eca.

King, N. J., Ollendick, T. H., & Prins, P. J. M. (2000). Test-anxious children and adolescents: Psychopathology, cognition, and psycho physiological reactivity. Behaviour Change, 17, 134-142.

Klejin, W.C., Vander-Ploeg, H.M. & Topman, R.M. (1994). Cognition, study habits, test anxiety and academic performance. *Psychological Reports, 75,* 1219-1226.

Kusi, H. (2012). *Doing Qualitative Research*. Department of Psychology and Education, University of Education Winneba. Accra: Emmpong Press.

Lahmers, A. G., & Zulauf, C. (2000). The secret to academic success: Hours and hours of study. *Journal of College Student Development, 41*, 545-554.

Lang, J.W.B., & Lang, J. (2010). Priming competence diminishes the link between cognitive test anxiety and performance. Implications for the interpretation of test scores. *Psychological Science, 21*, 811-819.

Lee, E. (2005). The relationship of motivation and flow experience to academic procrastination in university students. *Journal of Genetic Psychology* , 166, 5-14.

Leininger, M., Taylor Dyches, T., Prater, M.A., & Allen Heath, M. (2010). Teaching students with obsessive-compulsive disorders. *Interventions in School Clinic, 45*, 221-231. Doi:10.1177 /1053451209353447.

.Liebert, R. M., & Morris, L. W. (1967). Cognitive and emotional components of test anxiety: A distinction and some initial data. *Psychological Reports, 20*, 975-978.

Lewis, A. (1970). The ambiguous word anxiety. *International Journal of Psychology 9*, 62 – 79.

Linderholm, T., Cong, X., & Zhao, Q. (2008). Differences in low and high workingmemory capacity readers‟ cognitive and metacognitive processing patterns as a function of reading for different purposes. *Reading Psychology, 29,* 61–85.

Locker, J., & Cropley, M. (2004). Anxiety, depression and self-esteem in secondary school children. An investigation into the impact of standard assessment tests (SATs) and other important school examination. *School Psychology International, 25*, 333-345. doi: 10.1177/0143034304046905.

Lowe, P.A. & Lee, S.W. (2007). Factor structure of the Test Anxiety Inventory for Children and Adolescents (TAICA) scores across gender among students in elementary and secondary settings. *Journal of Psychoeducational Assessment OnlineFirst*, published July 12, 2007.

Lowe, P.A., Lee, S.W., Witteborg, K.M., Prichard, K.W., Luhr, M.E., Cullinan, C.M., Mildren, B.A., Raad, J.M., Cornelius, R.A., & Janik, M. (2007). The Test Anxiety Inventory for Children and Adolescents (TAICA): Examination of the psychometric properties of a new multidimensional measure of test anxiety among elementary and secondary school students. *Journal of Psychoeducational Assessment OnlineFirst*, published July 12, 2007.

Lowe, P.A., Lee,S.W., Witteborg, K.W., Prichard, K.W., Luhr, M.E., Cullinan, C.M., Mildren, B.A., Raad, J.M., Cornrlius, R.A., & Janik, M. (2008). The Test Anxiety

Inventory for Children and Adolescents (TAICA): Examination of the psychometric properties of a new multidimensional measure of test anxiety among elementary and secondary students. *Journal of Psychoeducational Assessment, 26*(3), 215-230.

MacCarthy, R. (2007). *When Anxiety Causes your Brain to Jam, Use your Heart*. Institute of Heart Math, Heart Math Research Centre. Boulder Creek, CA.

MacIntyre, P. D & Gardner, R. C (1991) Language anxiety: Its relation to other anxieties and to processing in native and second languages. Language Learning. 41(58), 117.

MacIntyre, P.D. (1995). How does anxiety affect second language learning? A reply to Sparks and Ganschow. *Modern Language Journal, 79,* 90-99.

Mandler, G., & Sarason, S. B. (1952). A study of anxiety and learning. *Journal of Abnormal and Social Psychology, 47,* 166-173.

Mathew, E., Tracy, B. D., & Scott, W. D. (2000). The efficacy of eye moment desensitization and reprocessing therapy technique in the treatment of test anxiety of college students. *Journal of College Counseling, 3*(1), 36-49.

McCraty, R. (2007). When *Anxiety Causes Your Brain to Jam Use Your Heart.* Institute of Heart Maths.

McDonald, A.S (2010). The prevalence and effects of test anxiety in school children. Educational Psychology, 21:89–98.

McDonald, A.S. (2001). The prevalence and effects of test anxiety in school children. *Educational Psychology, 2001, 21*: 89-101.

McNaught, K. (2007). The power of writing for all pre-service mathematics teachers. *Mathematics: Essential Research, Essential Practice*, *2*, 473-481. Retrieved, September 1, 2009, from http://www.merga.net.au/documents/RP422007.pdf.

McReynolds, P. (1985). Changing conceptions of anxiety: A historical review and a proposed integration. *Issues in Mental Health Nursing*, 7, 131-158.

Meijer, J. (2001). Learning potential and anxious tendency: Test anxiety as a bias in educational testing. *Anxiety, Stress, and Coping, 14*, 337-362.

Meijer, J., & Oastdam, R. (2007). Test anxiety and intelligence testing: A closer examination of the stage fright hypothesis and the influence of stress instruction. *Anxiety, stress, and coping, 20 (1),* 77-91.

Mertens D. M. (2003). Mixed methods and the politics of human research: The transformative – emancipator perspective. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioural research* (pp. 135-164). Thousand Oaks, CA: Sage.

Mesler, A. (2008). High Stake and Higher Impacts: the effects of High-Stakes Testing on School and Classroom Operations. Duke University, Durham, N.C.

Miesner, M. T., & Macki, R. H. (2007). The role of test anxiety in absolute and relative metacomprehension accuracy. *European Journal of Cognitive Psychology, 19*, 650-670. doi: 10.1080/09541440701326196.

Moon, S., & Illingworth, A. (2005). Exploring the dynamic nature of procrastination: A latent growth curve analysis of academic procrastination. *Personality and Individual Differences, 38*, 297-309.

Moris, L., Davis, M. & Hutchings, C. (1981). „Cognitive and Emotional Components of Axiety". *Journal of Educational Psychology, 73*(4), 541-555.

Moses, M.S., & Nanna, M.J. (2007). The Testing Culture and the Persistence of High Stakes Testing Reforms. *Education and Culture, 23*(1), 55-72.

Musch, J. & Broder, A. (1999). Test anxiety versus academic skills: A comparison of two alternative models for predicting performance in a statistics exam. *British Journal of Educational Psychology, 69(1)*105-116. Doi: 10. 1338/00709999157008.

Navah-Benjamin, M. McKeachie, W.J., Lin, Y.G. Holinger, D. P. (1987). Two types of test anxious students: Support for an Information-processing model. *Journal of Educational Psychology, 79*(2) 131-136. doi: 10.1037/0022-0663.79.2.131.

Needham, B.L. (2006*). Gender differences in the consequences of depressive symptomatology for educational attainment, social support and health risk behaviour during the transition from adolescence to adulthood,* PhD thesis. Universityof Texas.

Neuendorf, K.A. (2002). The content analysis: guidebook. Thousand Oaks, Sage Publications, pp, 1-301.

Neuman W. (2006). *Social Research Methods. Qualitative and Quantitative Approaches*. 6th ed. New York, NY: Pearson, Allyn and Bacon.

Nonis, S. A., & Hudson, G. I. (2010). Performance of college students: Impact of study time and study habits. *Journal of Education for Business, 85*(4), 229-238.

Ofori, R. Dampson, D. G. (2011). *Research Methods & Statistic Using SPSS*. Kumasi:Payless

Ohata, K. (2005) „Language Anxiety From the Teacher"s Perspective: Interviews With Seven Experienced ESL/EFL Teachers", *Journal of Language and Learning,* Vol. 3 (1),

Owens, M., Stevenson, J., Norgate, R., & Hadwin, J. A. (2008). Processing efficiency theory in children: Working memory as a mediator between test anxiety and academic performance. *Anxiety, Stress and Coping*, *21*(4), 417–430. doi:10.1080/10615800701847823.

Owen-Yeates, A. (2005). Stress in Year 11 Students. *Pastoral Care in Education*, 23(4), 42-51.

Papousek, I., Nauschnegg, K., Paechter, M., Lackner, H.K., Goswami, N., & Schulter, G. (2010). Trait and state positive effect and cardiovascular recovery from experimental academic stress. *Biological Psychology, 83,* 108-115.

Parks-Stamm, E. J., Gollwitzer, P. M., & Oettingen, G. (2010). Implementation intentions and test anxiety: Shielding academic performance from distraction. *Learning and Individual Differences, 20,* 30-33.

Pekrun, R., Elliot, A. J., & Maier, M. A. (2006). Achievement goals and discrete achievement emotions: A theoretical model and prospective test. *Journal of Educational Psychology, 98,* 583–597.

Phakiti, A. (2003). A closer look at the relationship of cognitive and metacognitive strategy use to EFL reading achievement test performance. *Language Testing, 20*, 26-56.

perceptions and motivation. Contemporary Educational Psychology, 29(4), 462– 482.

Pomerantz, E. M., Altermatt, E. R., & Saxon, J. L. (2002). Making the grade but feeling distressed: Gender differences in academic performance and internal distress. *Journal of Educational Psychology, 94,* 396–404.

Price, M. L. (1991) „The Subjective Experience of Foreign Language Anxiety: Interviews with High Anxious Students", in Horwitz, E.K., & Young, D. J. (eds.) *Language Anxiety: From Theory and Research to Classroom Implications.* Englewood Cliffs, NJ: Prentice Hall.

Putwain, D.W. (2007). Test anxiety in U.K school children: prevalence and demographic patterns. *British Journal of Educational Psychology. 77(3),* 579-593. (Eric Document Production Service No. EJ775603).

Putwain, D. W. (2008). Test anxiety and GCSE performance: the effect of gender and socio- economic background. *Educational Psychology in Practice*, 24(4), 319-334.

Putwain, D. W. (2008a). Deconstructing test anxiety. *Emotional and Behavioural Difficulties*, *13*(2), 141–155. doi:10.1080/13632750802027713.

Putwain, D.W. (2008b). Do high stakes examination moderate the test anxiety-examination performance relationship*? Educational Psychology. 28*(2), 109-118.

Putwain, D. (2009). Assessment and examination stress in Key Stage 4. *British Educational Research Journal, 35*(3), 391-411. doi: 10.1080/01411920802044404.

Putwain, D.W., Connors, L. & Symes, W. (2010). Do cognitive distortions mediate the test anxiety-examination performance relationship? *Educational Psychology, 30,* 11-26.

Putwain, D.W., Woods, K.A., & Symes, W. (2010). Personal and situational predictors of test anxiety of students in post- compulsory education. *British Journal of Educational Psychology*, *80*, 137-160.

Putwain, D.W., Woods, K.A., & Daniels, W. (2010). *Personal and situational predictors of test anxiety of students in post-compulsory education.* Manuscript submitted.

Rachman, S. (2004). Anxiety (2nd ed). New York: Psychology Press Ltd.

Rahil, M., Habibah, E., Loh, S.C., Muhd, F.M. Nooreen, N. and Maria, C. A. (2006). The relationship between students‟ self efficacy and their English language achievement. *Journal Pendidik dan Pendidikan, Jil. 21, 61–71.*

Rezazadeh, M., & Tavakoli, M. (2009). Investigating the relationship among test anxiety, gender, academic achievement and years of study: A case of Iranian EFL university students. *English Language Teaching, 2(*4), 68-74. Retrieved from www.ccsenet.org/journal/index.php/elt/article/view/4449/3789.

Robert, W. (1991). Journal of Counseling Psychology, Vol. 38(1), 30-38.

Salend, S. J. (2009). *Classroom testing and assessment for all: Beyond standardization.* Thousand Oaks, CA: Corwin Press.

Sansigiry, S.S. & Sail, K. (2006). Effects of students‟ perception of course load on test anxiety. *America Journal of Pharmaceutical Education. 70 (2)* 1-6.

Sansigiry, S.S., Bhosle, M & Sail, K. (2006). Factors that affect academic performance among pharmacy students. American Journal of Pharmaceutical Education, 70(5), E1- E9.

Sarason, I.G. (1975). Test anxiety and self-disclosing coping model. J. Consult. Clin. Psychol. 43: 148-152.

Sarason, I.G. (1978). Test anxiety scale: Concept and research. In I.G. Sarason & C.D. Spielberger (Eds.), *Stress and Anxiety* (Vol. 5, pp. 193-216). Washington, D.C.

Sarason, I. G. (1988). Anxiety, self preoccupation and attention. *Anxiety Research*, 1, 3.

Sarason I. G. (1995). Revisiting the culture of the school and the problem of change. New York: Teachers College Press.

Sarason, I.G., & Sarason, B.R. (1990). Test Anxiety, in H. Leitenberg (Ed.) *Handbook of Social and Evaluative Anxiety* (pp. 476-96). New York: Plenium Press.

Sarason, I.G., Sarason, B.R., & Pierce, G.R. (1996). Anxiety, cognitive interference, and performance. *Journal of Social Behavior and Personality, 5*, 1-18.

Sarason, S. & Mander, G. (1952). Some correlates of test anxiety. *Journal of Abnormal and Social Pyschology, 47,* 810-817.

Sarason, S. B., Davidson, K. S., Lighthall, F. F., & Waite, R. R., & Ruebush, B. K. (1960). *Anxiety in elementary school children.* New York: Wiley.

Sarason,I.G. (1984). Stress, Anxiety and Cognitive Interference: Reactions to Tests. *Journal of Personality and Social Psychology, 46(4),* 929-938.

Schutz, Davis & Schwanenfugel (2002). Organization of concepts relevant to emotions and their regulation during test taking. *Journal of Experimental Education, 70*, 316- 342.

Schwarzer, R. (1994). Optimism, vulnerability, and self-belief as health-related cognitions: A systematic overview. *Psychology and Health: An International Journal, 9*, 161-180.

Seidu, A. (2007). *Modern Approaches to Research. Winneba*: University of Education.

Seif, D. & Latifian, M.(2004). The relationship between motive beliefs & self regulation strategies among university students in Math. *Psychological Journal. 8(4).404-420.*

Sena, J. D. W., Lowe, P. A., & Lee, S. W. (2007). Significant predictors of test anxiety among students with and without learning disabilities. *Journal of Learning Disabilities, 40*, 360-376. Retrieved from: http://ezproxy.gsu.edu.

Sharma, S. (2002). Anxiety in students. Psychological Studies, 47,148 152.http://www.faqs.org/periodicals.

Sila, A. Y. (2010). *Young adolescent students' foreign language anxiety in relation to language skills at different levels*. Retrieved March 20, 2011 from http://www.sosyalarastirmalar.com/cilt3/sayi11pdf/ay_sila.pdf.

Soffer, M. E. (2008). Elementary students‟ test anxiety in relation to the Florida Comprehensive Assessment Test (FCAT). Unpublished master‟s thesis, Florida State University, Tallahhassee, Florida. Retrieved February 23, 2009 from http://etd.lib.fsu.edu/theses/available/etd-06092008-111004/unrestricted/SofferMThesis.pdf.

Spielberger, C. D. (1966). Theory and research in anxiety. In C. D. Spielberger (Ed.), Anxiety and behavior (pp. 3-20). New York: Academic Press.

Spielberger, C. D., & Vagg, P. R. (1995). *Test Anxiety, A transactional process model.* Washington, DC: Taylor & Francis.

Spielberger, C.D. (1980). Preliminary Professional Manual for the Test Anxiety Inventory. Palo Alto. CA: *Consulting Psychologists Press.*

Spielberger, C.D. (1983). Manual for State-trait Anxiety Inventory (Rev. ed.). Palo Alto, CA: Consulting Psychologists Press.

Spielberger, C.D., & Sarason, I.G (Eds.) (1989). *Stress and anxiety (vol. 12)*. Washinton: Hemisphere Publishing Company.

Spielberger, C. D., Charles, G., Sarason, G. & Irwin, H. (2005). Stress and emotion. Taylor and Francis group, LCC.

Spolsky, B. (1989). Conditions for Second Language Learning. Oxford: Oxford University Press.

Steel, P. (2007). The nature of proscastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psycho-logical Bullentin, 133,* 65-94. doi:10.1037/0033-2909.1331.65.

Stober, J., & Pekrun, R. (2004). Advances in test anxiety research. *Anxiety, Stress, & Coping*,

Stowell, J.R., & Bennett, D. (2010). Effects of online testing on student exam performance and test anxiety. *Educational Computing Research*, *42*(2), 161-171.

Strichart, S. S., & Mangrum, C. T. (2010). *Study skills for learning disabled and struggling students* (4th ed.). Upper Saddle River, NJ: Merrill/Pearson Education.

students reduce test anxiety. *Professional School Counseling, 6*(2), 162-164. Retrieved May 29, 2005, from Education Full Text database. success. *Psychological Topics. Vol. 17, PP15-36.*

Supon, V. (2004). Implementing strategies to assist test-anxious students. *Journal of Instructional Psychology*, *31*(4), 292-296.

Tanaka, A., Takehara, T., & Yamauchi, H. (2006). Achievement goals in a presentation task: Performance expectancy, achievement goals, state anxiety and task performance. Learning and Individual Differences, 16(2), 93–99.

Tang, M. (2005). Investigational research on class anxiety by students of none-English major. *Journal of Taiyuan Teachers College, 4*(1), 145-146.

Tashakkori, A. & Teddle, C. (1998). *Mixed Methodology. Combining Qualitative and Quantitative Approaches.* Thousand Oaks, CA: Sage Publications.

Tashakkori, A. & Teddle, C. (2003). *Handbook of mixed methods in the social & behavioural sciences (pp.3-50).* Thousand Oaks, CA: Sage Publications.

Taylor, A. I. & Quaigrain, K.A. (1999). Effects of Test Anxiety on Learning and Achievement Among Adult Students. *Ghanaian Journal of Special Education,UCEW Vol.1*,(4), 54-69.

Teddle, C. & Tashakkori, A. (2003). Major issues and controversies in the use of mixed methods in the social and behavioural sciences. In A. Tashakkori & C. Teddle (Eds.), *Handbook of mixed methods in the social & behavioural sciences (pp.3-5).*

Tenibiaje, D. J. 2009. Influence of family size, family birth order on academic performance of adolescents in higher institutions. *Pakistan Journal of Social Science*. 6(3).

Tobias, S. (1980). Anxiety and instruction. In I.G. Saarason (Ed.), test anxiety: Theory, *Research, and Applications*. Hillsdale, NJ: Lawrence Erlbaum.

Tobias, S. (1985). Test anxiety: interference, defective skills, and cognitive capacity. *Educational Psychologist, 20*, 135-142.

Tobias, S. (1990). *Test anxiety*: Cognitive interference inadequate preparation? United State Army Research Institute for the Behavioural Sciences. Retrieved from www.dtic.mil/dtic.

Tooley, J., & Dixon, P. (2006). „De facto" privatization of education and the poor: Implications of a study from sub-Saharan Africa and India. *Compare*, 36 (4), 443- 462.

Tryon, J. S. (1980). The Measurement and Treatment of Test Anxiety. *Review of Educational Research* (50, 2) 343-372.

Turner. B.G., Beidel, D.C., Hughes, S., & Turner,M.W. (1993). Test anxiety in African American school children. *School Psychology Quarterly, 8(2),* 140-152.

Uzun Ozer, B., Demir, A., & Ferrari, J. R. (2009). Exploring academic procrastination among Turkish students: Possible gender differences in Prevalence and Reasons. Journal of Social Psychology, 149, 241-257.

Vagg, P.R. & Papsdorf, J.D. (1995). Cognitive therapy, study skills and training, and biofeedback in the treatment of test anxiety. In C.D. Speilberger & P.R. Vagg, (Eds.). *Test anxiety: Theory, assessment and treatment*. Washington D.C: Taylor & Francis.

Vassilaki, E. (2006). Anxiety and cognitive functioning in primary and high school students. Stress and Anxiety Application to Health, Workplace, Community and Education. Newcastle: Cambridge Scholars Press.

Veenstra, R., Lindenberg, S., Oldehinkel, A., DeWinter, A. F., & Ormel, J. (2006). Temperament, environment, and antisocial behavior in a population sample of

preadolescent boys and girls. *International Journal of Behavioral Development, 30*(5), 422-432. doi: 10.1177/0165025406071490.

Vijayalaxmi, O. & Natesan, H. (1992). Factors influencing academic achievement. *Research Highlights*, **2**: 62.

Vitasari, P., Nubli, A.M., Othman, A., Herrawan, T., & Sinnadurai, S.K. (2010). The relationship between study anxiety and academic performance among engineering students. *Procedia Social and Behavioural Sciences,* 8, 490-497.

Vogel, H. L., & Collins, A. L. (2002). *The relationship be-tween test anxiety and academic performance.* Retrieved June 24, 2009, from http://clearinghouse.

WAEC (2007). Performance in Basic Education Certificate Examination: Chief Examiner"s Report on B.E.C.E. Accra: WAEC.

Walker, C., & Schmidt, E (2004). Smart tests: *teacher-made tests that help students learn.* Portland. ME: Stenhouse.

Wang, Z., & Englander, F. (2010). A cross – disciplinary perspective on explaining student performance in introductory statistics – what is the relative impact of procrastination? College Student Journal, 44, 458-471.

Weems, C. F., Scott, B. G., Taylor, L. K., Cannon, M. F., Romano, D. M., Perry, A. M., & Triplett, V. (2010). Test anxiety prevention and intervention programs in schools: Program development and rationale. *School Mental Health, 2*, 62-71. doi: 10.1007/s12310-010-9032-7.

Weems, C. F., Taylor, L. K., Costa, N. M., Marks, A. B., Romano, D. M., Verrett, S. L.,Brown, D. M. (2009). Effect of a school-based test anxiety intervention in ethnic minority youth exposed to Hurricane Katrina. *Journal of Applied Developmental Psychology, 30*, 218-226. doi: 10.1016/j.appdev.2008.11.005.

Weems, C. F., Scott, B. G., Taylor, L. K., Cannon, M. F., Romano, D. M., Perry, A. M., & Triplett, V. (2010). Test anxiety prevention and intervention programs in schools: Program development and rationale. *School mental health, 2*(2), 62-71. doi: 10.1007/s12310-010-9032-7.

Weiner, B. (1992). Human motivation: Metaphors, theories and research. Heverly Hills: Sage.

Whitaker Sena, J. D., Lowe, P. A., & Lee, S. W. (2007). Significant predictors of test anxiety among students with and without learning disabilities. *Journal of Learning Disabilities, 40,* 360–376. doi:10.1177/00222194070400040601.

Wilson, J. H. (2006). Predicting students attitudes and grades from perceptions of instructors attitudes. *Teaching of Psychology*, 28, 136-138.

Wine, J. (1971). Test anxiety and direction of attention. *Psychological Bulletin, 2,* 92-104.

Wine, J. (1980). Cognitiveattentional theory of text anxiety. In I.G. Sarason (Ed.), Test anxiety: Theory, research, and applications. (pp. 349385). Hillsdale, NJ: Erlbaum Associates.

Wittmaier, B. (1972). Test anxiety and study habits. *The Journal of Educational Research,* 65, 852-854.

Wolfe, B. E. (2005). Understanding and Treating Anxiety Disorders: An Integrative Approach to Healing the Wounded Self. Washinghton D.C.

Wolters, C. A. (2003). Understanding procrastination from self-regulated learning perspective. Journal of Educational Psychology, 95, 179-187.

Wong, S. S. (2008). The relations of cognitive triad, dysfunctional attitudes, automatic thoughts, and irrational beliefs with test anxiety. *Current Psychology, 27*, 177- 191. doi: 10.1007/s12144-008-9033-y.

Warlonyo, E. (2008). Performance in B.E.C.E. *Daily Graphic, July*, 11, p. 7

Wren, D, G., & Benson, J. (2004). Measuring test anxiety in children: Scale development and international construct validation. *Anxiety, stress, and coping: An International Journal, 17*(3), 227-240.

Yenilmez, K. and Özbey, N. (2006). A study on the anxiety levels of private school students and state school students. Uludağ University Journal of Faculty of Education, XIX (2), 431- 448.

Young, D.J. (1991). Creating a low-anxiety classroom environment: what does the language anxiety research suggest? *Modern Language Journal*, 75/4, 426-437.

Young, D. J. (1999). Affect in foreign language and second language learning. Boston, MA: McGraw-Hill.

Zbornik, J. (2003). *Reading anxiety manifests itself emotionally, intellectually*. Third in a series. Retrieved on February 7, 2003 from: http://www.1kwdpl.org/schools/specialed/zbornik3.htm.

Zeidner, M. (1998). Test Anxiety: *The state of the art*. New York: Plenum Press.

Zeidner, M. (1991). Statistics and mathematics anxiety in social science students: Some interesting parrells. *British Journal of Educational Psychology, 61*(3), 319-328.

Zeidner, M., & Matthews, G. (2005). Evaluation anxiety: current theory and research. In A. J. Elliot, & C. S. Dewck (Eds.), *Handbook of Competence and motivation* (pp. 141-162). New York: The Guilford Press.

Zinta, R. L. (2008). Effectiveness of Guided Mastery Treatment of Reducing Applied Psychology, Vol. 34(2). PP. 233-239.

Zoller, U. & Ben-Chain, D. (2007). Interaction between examination type, anxiety state and academic achievement in college science: An action-oriented research. *Digital Object Identifier,* School of Education of Kibbutz Movement, Kiryat Tivon, Israel.

APPENDIX "A"

TEST ANXIETY SCALE QUESTIONNAIRE FOR STUDENTS

SECTION A

STUDENTS BACKGROUND INFORMATION

Direction: Here are some items regarding your background information. Kindly provide the information as requested.

1. Age. 14-16 [ ]. 17-19 [ ]. 20-22 [ ].

2. Sex: Male [ ]. Female [ ].

3. Programme. Business [ ]

Gen. Arts [ ]

Gen. Agric [ ]

Visual Art [ ]

Home Economics [ ]

Science [ ]

Technical [ ]

SECTION B – TEST ANXIETY SCALE (SARASON, 1978)

Directions: Please tick {√} the cell that indicates your true rating from always (5) to never (1)

Statements	**Strongly disagree 1**	**Disagree 2**	**Agree 3**	**Strongly agree 4**
1. I worry while I am taking a test.				
2. While taking a test, I am thinking that other students are better than I				
3. When I know that I will take a test, I do not feel confident and relaxed.				
4. I feel worried when I learned that I would take a test.				
5. I cannot feel confident even if I have good grades.				
6 After the test, I feel I would do better.				
7. During the test, my emotions affect my performance negatively				
8. During the test, I forget what I know.				
9. I feel worried when I study for a test.				
10. I feel pressured by time limits during test.				
11. I would learn more if I should not have tests.				

12. Tests affect my performance negatively.				
13. I worry even when I am prepared well				
14. I worry when I am not prepared well.				

APPENDIX "B"

FACTORS CAUSING TEST ANXIETY

Directions: Please tick {√} the cell that indicates your true rating from Very Large Extent, to Not at all true.

Statement	**Very large extent 5**	**Fairly large extent 4**	**Moderate extent 3**	**Slight extent 2**	**Not at all 1**
1. Lack of confidence.					
2. Fear of not achieving the best.					
3. Inadequate preparation.					
4. Family expectation.					
5.Limited study time					
6. Negative feedback from teachers.					
7. Problem of study habits and test readiness skills.					
8. Over-ambitious achievement target.					

APPENDIX "C"

STUDENTS ATTITUDE TOWARD EXAMINATION QUESTIONNAIRE

The following statements relate to your reaction to test anxiety from an individual standpoint.

Directions: Please tick { √ } the cell that indicates your true rating from strongly agree, to strongly disagree.

Statement	**Strongly agree**	**Agree 3**	**Disagree 2**	**Strongly disagree**
1. Students worry about how hard the test is.				
2. Students bring prepared answers into the examination hall.				
3.Students get nervous writing mathematics and English exam				
4. Students refuse to stop writing at the end of the examination.				
5. Students get depressed after taking a test.				
6. Students idle until it is close to examinations time.				
7. Students do not submit scripts at the end of an examination.				
8. Students copy from one another or exchange questions.				

APPENDIX "D"

INFLUENCE OF TEST ANXIETY ON ACADEMIC PERFORMANCE

QUESTIONNAIRE

Directions: Please tick { √ } the cell that indicates your true rating from strongly agree, to strongly disagree.

Statement	**Strongly agree 4**	**Agree 3**	**Disagree 2**	**Strongly disagree 1**
1 During exam, I find it difficult organizing my thoughts.				
2. During exams, I find it difficult to retrieve key information.				
3. I do not feel confident and mentally relax before a test.				
4. I have difficulty reading and understanding the questions on the exam paper.				
5. I usually score lower on a test than I do on assignments.				

APPENDIX "E"

TEACHERS INTERVIEW GUIDE

SECTION A - TEACHERS BACKGROUND INFORMATION

Direction: Here are some items regarding your background information. Kindly provide the information as requested.

1. Age. 20-30 [ ]. 31-40 [ ].41-50 [ ] 51+ [ ]

2. Gender: Male [ ]. Female [ ].

3. Marital status. Single [ ]. Intact [ ] Divorce [ ]

4. Qualification. Diploma [ ]. First Degree [ ]. Second Degree [ ]

5. Number of years taught. 1-15 years [ ] 6 –10years [ ] 11-15years [ ] 16 –20years [ ]

21years+ [ ]

SECTION B - TEACHERS INTERVIEW GUIDE

1. Do you notice test anxiety among your students during term examination?

2. Do you observe any differences between boys and girls behaviour during examination?

3. What would you say about your observations of students" test anxiety and their academic achievement?

4. What are the provoking factors of test anxiety among your students?

5. What can be done to reduce students" test anxiety?

APPENDIX "F"

LEVELS OF STUDENTS" TEST ANXIETY

Variables	N	High (%)		Moderate %		Low %	
1. I worry while I am taking a test.	270	79	29.3	155	57.4	36	13.3
2. While taking a test, I am thinking that other students are better than I am.	270	101	37.4	99	36.7	70	25.9
3.When I know that I will take a test, I do not feel confident and relaxed.	270	73	27.0	166	61.5	31	11.5
4.I feel worried when I learned that I would take a test.	270	171	63.3	77	28.5	22	8.2
5.I cannot feel confident even if I have good grades.	270	103	38.1	99	36.7	68	25.1
6.After the test, I feel I would do better.	270	176	65.2	71	26.3	23	8.5
7.During the test, my emotions affect my performance negatively.	270	103	38.1	119	44.1	48	17.8
8.During the test, I forget what I know.	270	97	35.9	111	41.1	62	23.0
9.I feel worried when I study for a test.	270	32	11.9	208	77.0	30	11.1
10.I feel pressured by time limits during test.	270	117	43.3	102	37.8	51	18.9
11.I would learn more if I should not have test	270	68	25.2	187	69.3	15	5.5
12.Tests affect my performance negatively.	270	51	18.9	191	70.7	28	10.4
13.I worry even when I am prepared well.	270	86	31.9	132	48.9	52	19.2
14.I worry when I am not prepared well.	270	43	15.9	201	74.5	26	9.6

APPENDIX "G"

Figure G1.

Test of normality using the Q-Q Plot

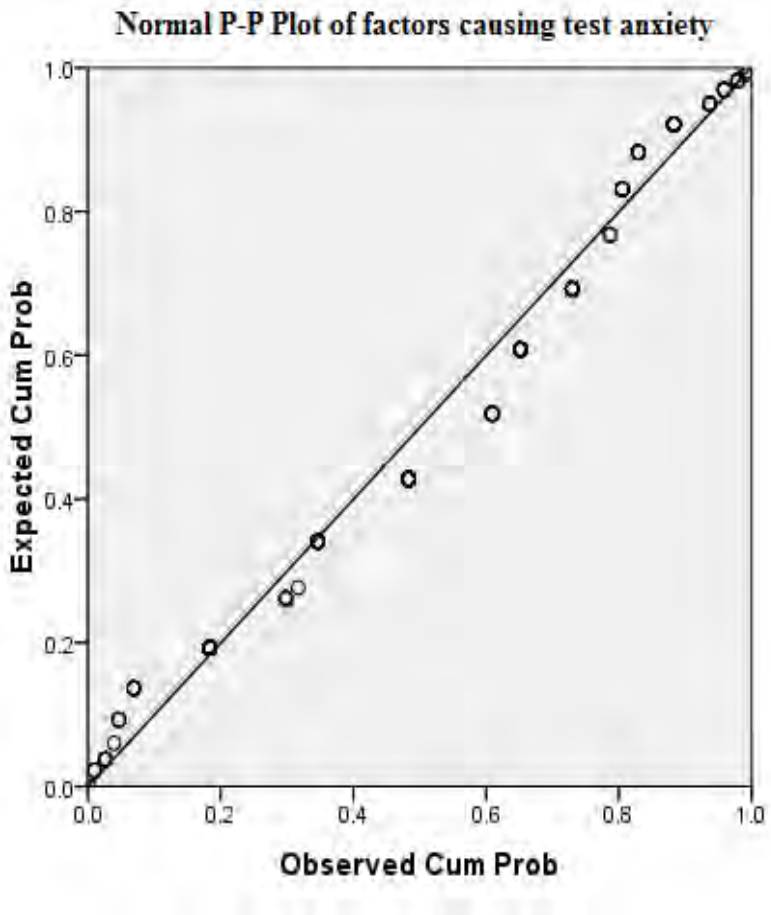


Figure G2: Q –Q Plot showing the normality of data collected on factors causing test anxiety.

APPENDIX G

Figure G2

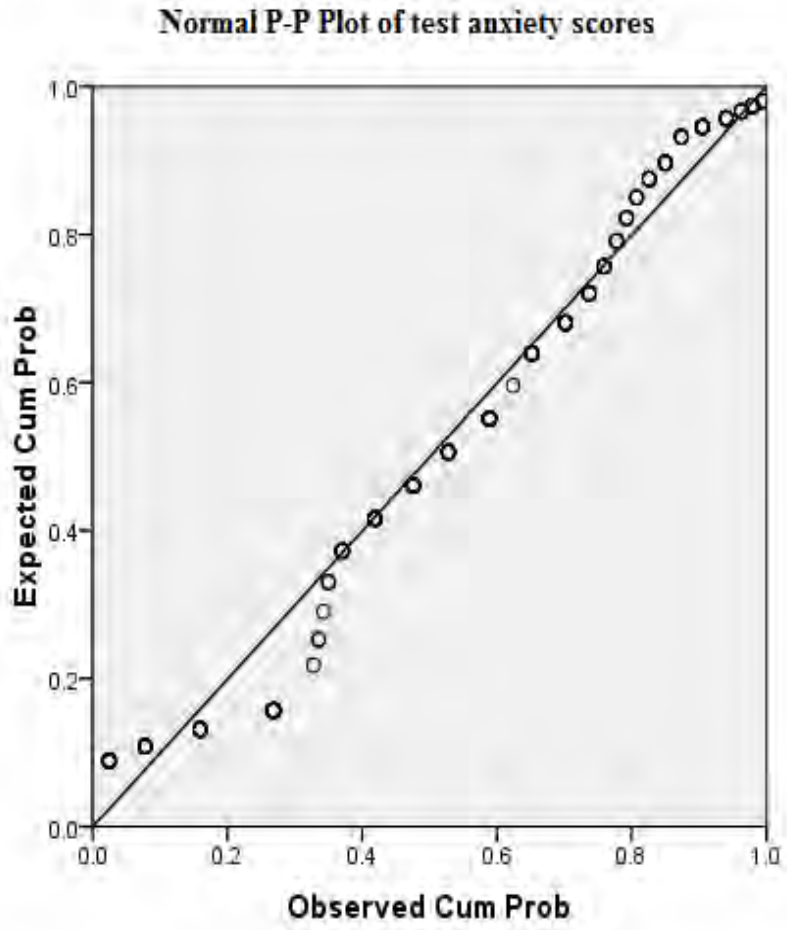


Figure G2: Q-Q Plot showing the normality of data collected on test anxiety.

APPENDIX G3

Figure G3

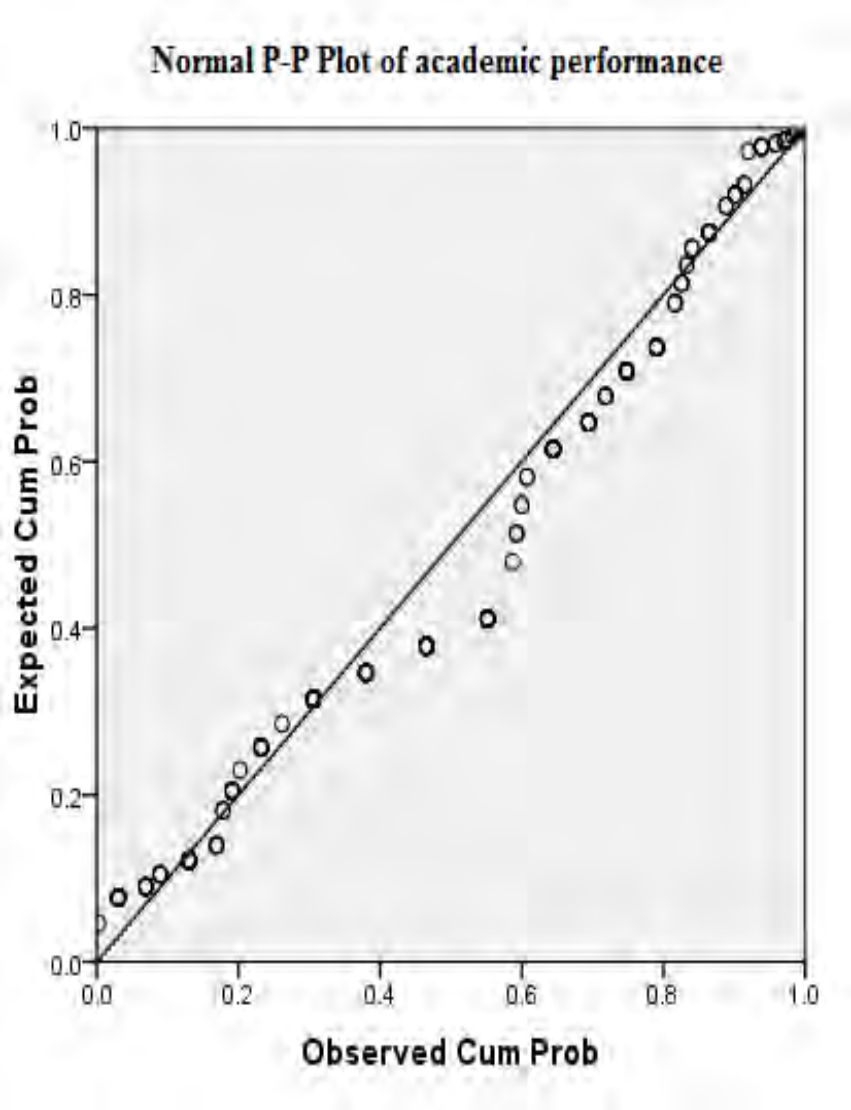


Figure G3: Q-Q Plot showing the normality of data collected on academic performance.

APPENDIX G

Figure G4

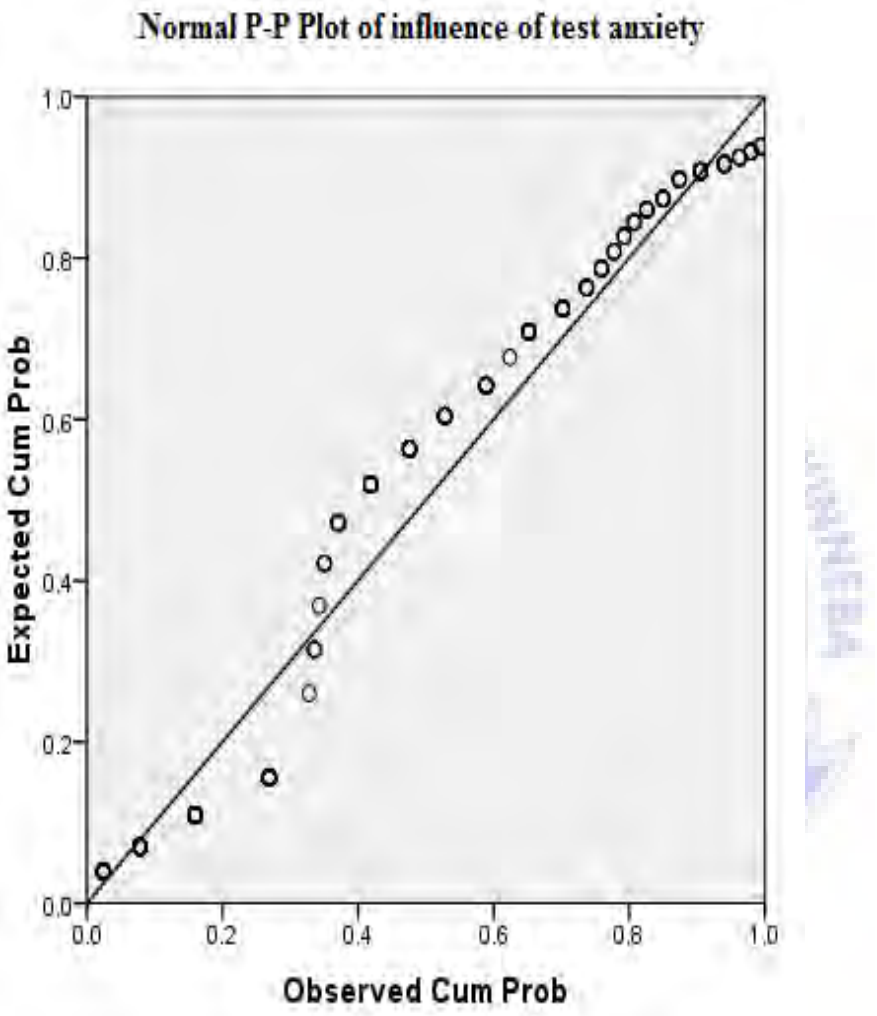


Figure G4: Q-Q Plot showing the normality of data collected on factors influencing test anxiety.

APPENDIX G

Figure 5

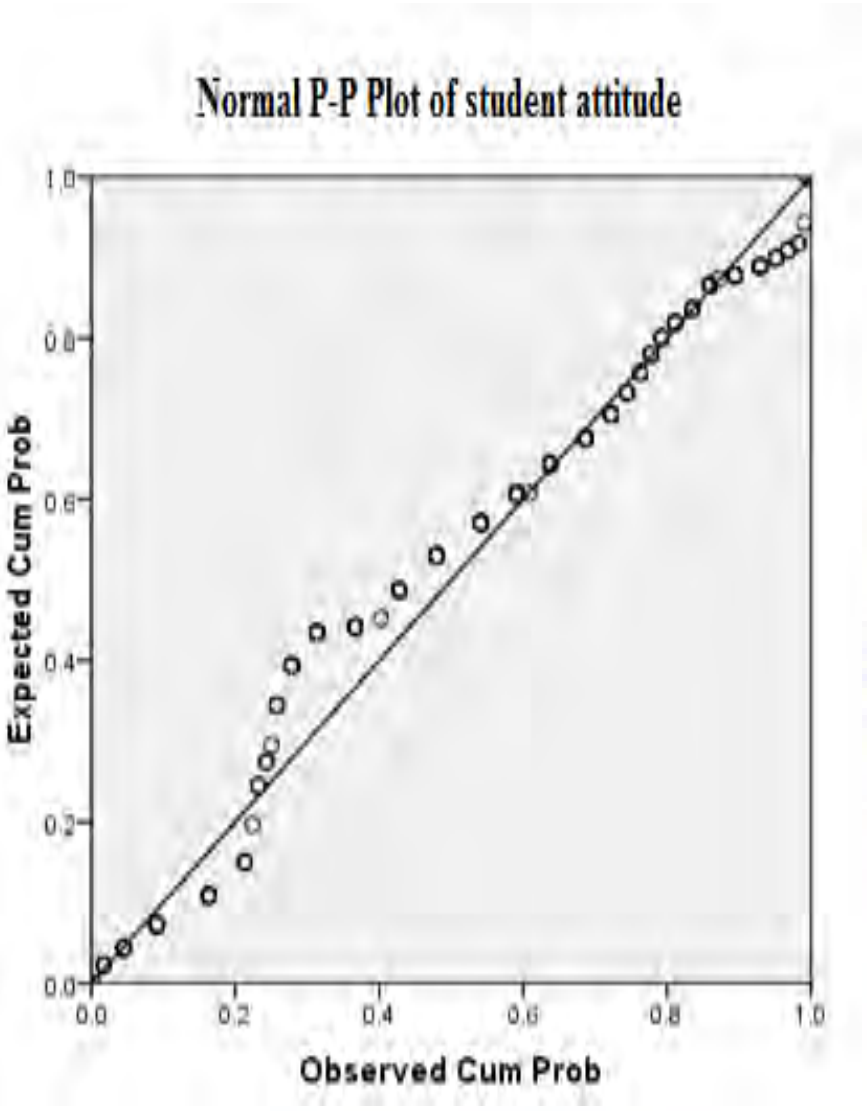


Figure G5: Q-Q Plot showing the normality of data collected on students‟ attitude toward test.

APPENDIX „H"

AUTHOR"S PROPOSAL ON STRATEGIES TO REDUCING TEST ANXIETY

H1. Recommendations for Students

Preparing for Tests

1. Maintain good study habits:
    - Plan a revision time table and follow it religiously.
    - Develop mnemonics device to help recall.
    - Set clear specific targets and establish priorities.
    - Practice examination papers in the prescribed times.
    - Revise, read through summaries and practice recall.
    - Practice relaxation.

During Tests

- Read and pay careful attention to all instructions.
- Read each passage and accompanying questions.
- Allocate time in examinations.
- Read and respond to items one at a time rather than thinking about the whole test.
- Write succinctly, legibly and to the point.
- Skip difficult questions until all other questions have been answered.
- Keep a good attitude. Think positively!

After Tests

- Congratulate yourself on identified areas of strength.
- Identify areas of weakness which you will want to improve for a better performance next time.

Student Strategies for Reducing Test Anxiety

- Share your feelings of anxiety with parents and teachers.
- Think of the test as an opportunity to show what you know.
- Review homework and materials which pertain to the test topics.
- Relax, breathe deeply and stay focused on the test.
- Remember the test is only one way one"s academic performance is measured.
- Develop test-taking strategies such as organizational skills and study guides.
- Avoid anxiety provoking areas and stop discussing examination questions when you have another one to write in a short interval.

H.2. Recommendations for Teachers

Before Test Administration

- Notify students of the test dates in advance.
- Create an uncluttered testing environment.
- Use a variety of test formats.
- Encourage all students to be present on test dates.
- Set clear and unambiguous questions for students.

During Test Administration

- Expect every student to read all test content material without assistance unless otherwise noted in the Test Administration Manual.
- Do not read the test, unless specially instructed to do so.
- Monitor to ensure that students begin marking answers in the proper area of the answer sheet.
- Anticipate and eliminate test disruptions.
- Make sure students work independently.

After Test Administration

• Collect and account for all test materials.

• Ensure that students‟ demographic information on the answer documents is written accurately.

• Analyze test reports for instructional strengths and weaknesses.

• Develop a plan to modify instructional strategies to address any identified test weaknesses.

Teacher Strategies for Reducing Test Anxiety

- Discuss the purpose of the test and how it can help students progress academically.
- Have realistic expectations of students' performance while encouraging students to do their best.
- Modify tasks such as breaking them into smaller units.
- Be careful not to over emphasize the importance of the test.

H.3. Recommendations for Parents

Preparing for Testing

- Often, reasoning is not effective in reducing anxiety, so do not criticize your child for being unable to respond to rational approaches. Encourage your child to take responsibility for homework and class study.
- Avoid being overly critical, disparaging, impatient or cynical. Help your child learn how to find information independently. Since meaningful academic achievement cannot take place in an emotionally loaded environment.
- Maintain realistic, attainable goals and expectations for your child.
- Encourage your child to ask questions at home and in class.
- Attend Parent-Teacher Association meetings.
- Gather available test preparation materials.

Testing Day

- See to it that your child arrives at school on time and is relaxed.
- Encourage your child to do the best work possible.
- Do not send your child to school if illness is apparent.
- Do not remove your child from school on test days for appointments.

After Testing

- Examine all test reports sent home.
- Determine areas of strengths and weaknesses.
- Praise your child's testing strengths and make a plan to address identified weaknesses.
- See your child's counsellor or teacher if additional information is required.

Parent Strategies for Reducing Test Anxiety

- Discuss the test openly and in a positive way.
- Have realistic expectations of your child's performance while encouraging his/her best efforts.
- Emphasize that the test is only one measure of academic performance.
- Emphasize that test scores do not determine a person's worth.

APPENDIX „Ɪ' INTRODUCTORY LETTER

UNIVERSITY OF EDUCATION, WINNEBA
DEPARTMENT OF PSYCHOLOGY AND EDUCATION

Tel.: (03323) 20026 EXT. 123
Email: psychology@uew.edu.gh

P O Box 25
Winneba
Ghana

28th November, 2011

Dear Sir/Madam,

LETTER OF INTRODUCTION

The bearer of this letter Emmanuel Amissah is a student in the Department of Psychology and Education of the University of Education, Winneba reading for a Master of Philosophy degree in Guidance and Counselling.

In partial fulfilment of the requirements for the award of the above mentioned certificate, he is undertaking a research on the topic: *'The Effects of Test Anxiety on Academic Achievement of 3rd Year Senior High School Students in the Agona Municipality of the Central Region'.*

He is required to administer questionnaire to help him gather data for the said research and he has chosen to do so in your institution.

I shall be grateful if he is given the necessary assistance.

Yours faithfully,

Prof. J K Aboagye
Head of Department

Distribution:

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- Swedru School of Business
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