

THE EFFECT OF BREATHING TECHNIQUES ON TEST ANXIETY
AMONG STUDENTS AT THE UNIVERSITY OF ZULULAND
(MAIN CAMPUS)

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DECLARATION

I, Lwazi Professor Zondi hereby declare that this is my own work and all the sources used have been indicated and acknowledged by means of complete references.

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ABSTRACT

The study investigated the effect of breathing techniques on test anxiety among students at the University of Zululand (main campus). Data was collected on a sample of one hundred (N=100) full time students aged between eighteen (18) and thirty two (32). The study consisted of the intervention group (N=60) and the control group (40).

Results of the study indicated that participants in the intervention group obtained different results after the intervention of breathing techniques. There was a small discrepancy between the control and the intervention group in the post-test phase. This verified the hypothesis that breathing techniques had a positive effect on students with test anxiety. The results were however not statistically significant probably because of a shorter period of breathing intervention. On the whole, the intervention suggests that breathing does have a positive effect on test taking anxiety.

CHAPTER 1

INTRODUCTION

1.1. Introduction

Modern living has been characterized by stressful lifestyles that demand striving for success and competition. One shall pass the stage of evaluation in order to be regarded as competent amongst others. Examination anxiety becomes a major concern because the tested individuals will expect to be regarded as competent and meeting the standards of a certain criteria. This has been evidenced when students are being examined to test whether they are ready to pass a certain grade or level. Social concerns generally come and go, while the stress of tests may persist week after week, over a span of many years (Miller, Morton, Driscoll & Davis, 2006).

The learning procedure in formal education is comprised of primary, secondary and tertiary level of education. Entering university as a tertiary level of education is a challenge for all students. The transition to university for many first year students is a difficult and challenging time as they move into a complex and fast-paced university environment (National Resource Centre, 2006). Most students present with the objective of obtaining their degrees, diplomas and certificates without bearing the subjective experience of academic demands.

Students are tested on different spheres to evaluate their competency on different fields. The testing process leads students to be overwhelmed by stress and anxiety about the tests. It has impacted on student's true potential and has led students to find it difficult to cope during examinations. Strategies to assist students cope under this anxiety- provoking experience has been psycho-pharmacotherapy and individual therapy. Medication might be expensive for government and consumers in public sector so as it may be with individual psychotherapy. This encourages a cost-effective and economical forms of intervention to assist students manage anxiety.

The aim of this study is to evaluate the effectiveness of breathing techniques amongst students with test anxiety in University of Zululand.

1.2 Motivation of the study

Considering the University of Zululand mission which is to make education accessible to diverse students, to provide relevant education, to generate knowledge through research and to produce knowledgeable graduates; it is clear that students will need interventions that will maximize their academic performance, including anxiety interventions. The vision of the university is to provide quality education which is accomplished by academic excellence of students. However, academic demands, social pressure and test anxiety seem to form part in determining the success or failure in activities that are performed academically by students. This has been supported by an increase in the number of cases in the Students Services Department of students with symptoms of test anxiety during examinations.

The lack of academic success among student in institutions of higher learning has negative consequences on students themselves, families, workplace, and the university image (Williams, Davis, Johnson, Williams, Saunders, & Nebirr, 2007). The researcher is, therefore, motivated by the need to implement programs that would assist students cope with their academic demands.

1.3 Statement of the problem

Between fifteen and thirty five (15%–35%) percent of students are adversely affected by test anxiety. Highly anxious students score about 12 percentile points below their low-anxiety peers (Hembree, 1988; cited by Driscoll, 2004; 1), making test anxiety one of the more serious academic handicaps among students today. Worry and dread are thought to interfere with concentration and are closely associated with impairment, while over-arousal without the worry features is only loosely associated with impairment.

Excessive test anxiety often contributes to impaired test performance, and the term test anxiety is commonly used to refer to the anxiety and its accompanying impairment. The psychological arena seems to overlook on the intervention programs that can identify and assist students who can benefit from anxiety- reduction interventions. The programs to reduce test- anxiety impairment need an instrument to identify those students who are anxious and might benefit from an anxiety reduction intervention, with some assurance that the instrument identifies test- anxiety impairment. Due to the theoretical background that anxiety helps in some way the line

is not easily drawn between normal and abnormal anxiety on the other hand there is a continuous regression in academic progress.

1.4 Hypothesis

Breathing exercises help to reduce test anxiety symptoms among students.

1.5 Aim of the study

The aim of this study is to investigate the effect of breathing exercises on the reduction of test anxiety among students at the University of Zululand.

1.6 Objective of the study

The objective of this study is to find out whether or not breathing exercises are effective in reducing test anxiety among students.

1.7 Definition of terms

1.7.1 Test anxiety

Test anxiety involves a combination of physiological over-arousal, worry and dread about test performance, and often interferes with normal learning and lowers test performance. It is a physiological condition in which people experience extreme stress, anxiety, and discomfort during and/or before taking a test

1.7.2 Students

Students are learners, who attend an educational institution. They are registered under that institution for a certain period of time with the goal completing and progressing to another level of training. Although there are other institutions but in most cases, educational institutions consist of primary, secondary and tertiary level of education where students are expected to be promoted to next level when they meet the requirements of each level. Students go through a process of being assessed on different aspects to evaluate whether they meet the requirements.

1.7.3 Breathing techniques

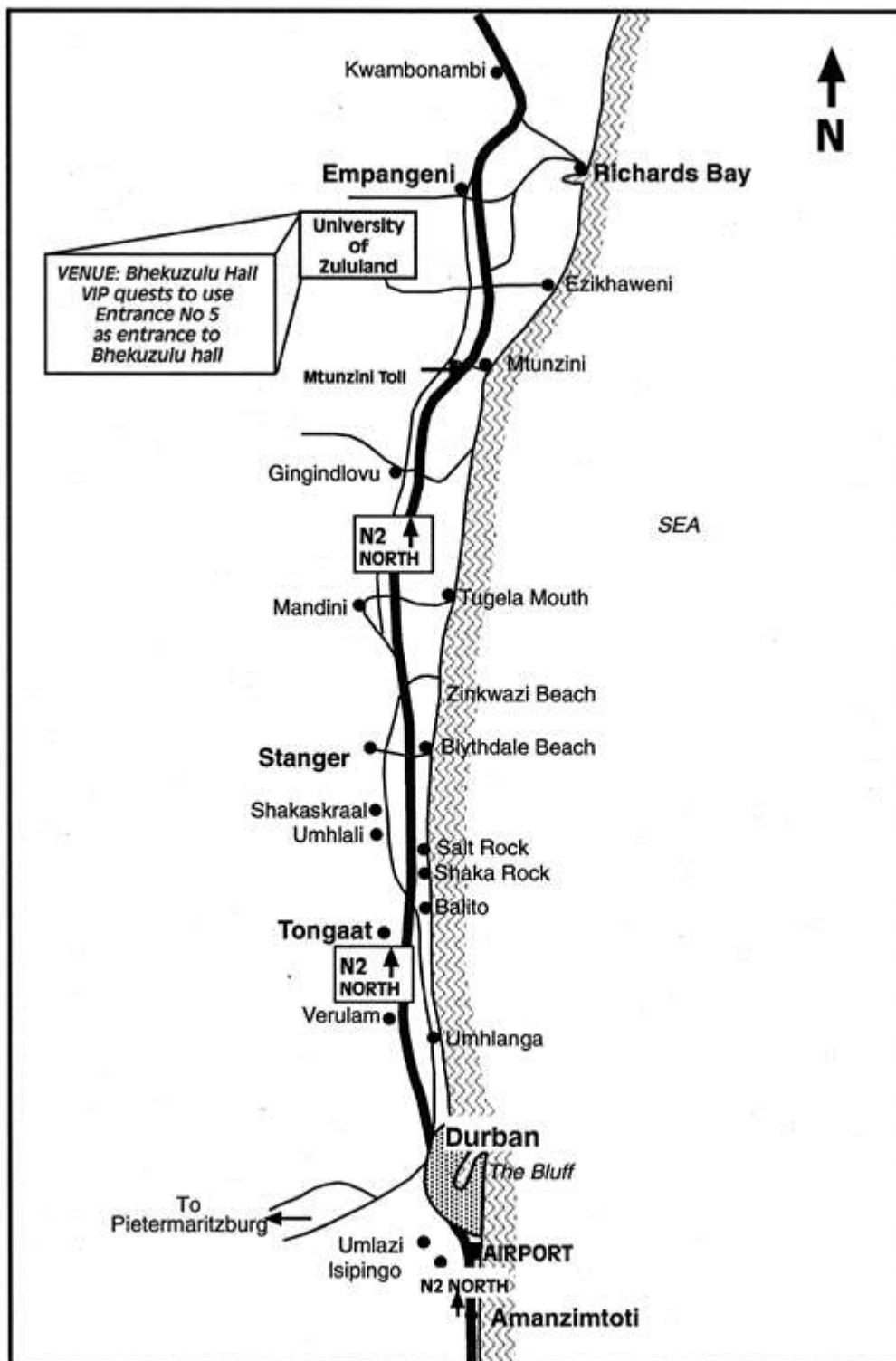
Breathing techniques are bodily activities that enhance or maintain overall health and wellness. They are strategies which affect the breathing rate with the goal of reducing any effects that impact on the breathing rate. It also improves mental health, help to promote or maintain positive self-esteem. There are different techniques including deep breathing, diaphragmatic breathing, breathing retraining, yoga, pranayama and meditative breathing.

1.7.4 University of Zululand (main campus)

The University of Zululand (also known as Unizulu) is a tertiary educational institution north of the UThukela River in KwaZulu-Natal. It is located at KwaDlangezwa in Empangeni area. It consists of more than eleven thousand (11 000) enrolled students in different academic fields. It was established in 1960 as a college academically affiliated to the University of South Africa. Since then the University of

Zululand has dramatically evolved from a so called 'bush college' to a full – fledged University equal to any centre of higher learning in South Africa. The University experiences an increased intake of students from other parts of Africa, especially from Namibia, Nigeria, Kenya, Zimbabwe, Lesotho, and Swaziland (see Figure 1 for the Map).

Figure 1: Map indicating the Location of the University of Zululand



University of Zululand (Main Campus)

1.8 Delimitation of the study

This study focused on fulltime students of the University of Zululand main campus.

This will make it easy for the researcher to control the participants of the study.

1.9 Values of the study

- i. This study would bring to light whether or not breathing exercises are effective in reducing test anxiety.
- ii. Results from this study would assist in the development of programs aimed at helping students deal with anxiety during their exams and study times.
- iii. Both students and lecturers would benefit from this study since it would work toward developing programs that would assist students deal with their academic demands.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Anxiety is perceived as a persisting human experience. According to Larson, El Ramahi, Conn, Estes, and Ghibellini (2010), it is among the most prevalent and pervasive human emotions, with a large sector of the world's population suffering from severe levels of anxiety. Anxiety can be described as a perceived notion of psychological distress which occurs due to the expectation of a disconcerting and potentially threatening event. Extensive research has focused on the concept of anxiety, but it cannot be explained only by its objective presentation or symptoms (Rachman, 2004). Due to the omnipresent nature of anxiety, it has been constructed and categorized in different subtypes (for instance, social anxiety, state-trait anxiety). The focus of the present study is on one other such subtype, namely, test anxiety.

2.2 Test anxiety defined

The concept of test anxiety has released different explanations in literature due to the multimodal nature of its construct. The views of test anxiety predominantly involved the physiological, emotional, behavioral and cognitive components. At the beginning, test anxiety was perceived to be an individual's reaction to test and performance. Hodapp, Glanzmann and Laux, (1995) conceptualized test anxiety as a situation specific trait, namely as a disposition to react with heightened anxiety in the face of situations that are specifically related to tests and performance. Ergene (2003, p.314)

quoted Spielberger's (1972) widely accepted definition that "test anxiety is an unpleasant state characterized by feelings of tension and apprehension, worrisome thoughts and the activation of the autonomic nervous system when an individual faces evaluative achievement-demanding situations." These views considered the physiological aspects in the definition of test anxiety.

The second views on test anxiety considered test anxiety as a set of physiological, behavioural, emotional, and cognitive responses to the perceived threat of failure on a test or other evaluative situation. Among scholars, the most widely agreed-upon conceptualization describes test anxiety as a multidimensional unpleasant state (Sapp, 1999). Test anxiety involves an interaction among physical and emotional tension and autonomic nervous system arousal, cognitive worry and doubt in one's abilities, and behavioral responses that interfere with test preparedness (e.g., avoidance and procrastination of studying).

Zeidner (1998) focused on the behavioral aspects of test anxiety. He described test anxiety as "...the responses that accompany concern about possible negative consequences or failure on an exam or similar evaluative situation," (pp. 17- 18). A student experiencing test anxiety may present as easily distracted, forgetting previously known information, or "freezing up" when taking an exam. Huberty, (2009) asserted that there should be no definition of test anxiety that does not involve the central characteristic of worry, and, although everyone worries occasionally, excessive worry can impair social, personal, and academic functioning. Test anxiety

refers to an unpleasant emotional reaction, characterized by subjective feelings of tension, apprehension, nervousness, and uncertainty, precipitated by evaluative situations (King, Ollendick & Gullone, 1991). Wine (1971) defines test anxiety as people's response to nervousness induced by the testing situation with worried negative self-centered thoughts and statements. The understanding of the definition of test anxiety might assist in developing intervention programmes that will be in accordance with its definition.

2.3 Historical background of test anxiety research

Test anxiety was early identified by Stöber and Pekrun (2004) without its specific concept until 1952. Studies that explored the prevalence and impact of test anxiety began at Yale University in the United State of America (Hembree, 1988). Sarason and Mandler (1952), assisted with the Test Anxiety Questionnaire which was assigned to participants designed to evaluate their level of test anxiety. The findings indicated that those found to be low-test anxious did better than the high-test-anxious students in a test given during an experiment where block design was employed. Test anxiety was conceptualized and assessments were developed for proper treatment. In the 1960's the conceptualization of test anxiety continued to be broad and involved worry and emotionality as central features of test anxiety (Liebert & Morris, 1967).

In the 1980's research on test anxiety began to be more on developing models of test anxiety. The most dominant model was interested in understanding the effect of test anxiety in attention and cognitive performance (Stöber & Pekrun, 2004). After the

1980's, research on test anxiety focused more on observed symptoms for example; the physiological reaction to test anxiety (trembling, sweating etc.). Research on test anxiety has broadened and instruments measuring test anxiety has been standardized and revised to correspond to its presentation. The reasons for the continued interest in test anxiety include the following: First, test anxiety remains to be an important variable in basic research in cognition and emotion, personality, and social psychology that investigates individual differences in cognitive performance and achievement motivation. Second, in all disciplines in applied psychology looking at performance and achievement; such as educational psychology, health psychology, sport psychology, and industrial and organizational psychology, test anxiety remains to be an important factor.

Educational psychology, for example, has shown that test anxiety is an important factor in students' primary, secondary, and tertiary education. In school students, individual differences in test anxiety play a major role not only for students' achievement, but also for their school related motivation, their academic self concept, and finally for their career advancement as well as for their personality development and health. Moreover, in educational testing, test anxiety may present a bias that may conceal the true potential of students (Stöber & Pekrun, 2004).

According to Schwarzer and Buchwald (2003), research in test anxiety is more prominent as it may perhaps appear. Firstly, test anxiety may sometimes be subsumed under broader notions, for example, the notion of examination stress of which test

anxiety represents a main theme. Secondly, research on test anxiety may come under different names. For example, test anxiety may appear under the term of performance anxiety when relating to artists or competitive anxiety when relating to athletes (Hanton, Evans & Neil, 2003; Mor, Day, Flett & Hewitt, 1995). Furthermore, research on test anxiety may be "hidden" under names related to more specific forms of test anxiety like, for example, math anxiety or statistics anxiety (Onwuegbuzie, 2000; Ashcraft & Kirk, 2001). Lastly, as individual differences in test anxiety and fear of failure can hardly be differentiated on an empirical level (Hagtvet & Benson, 1997), results from the two different research traditions may be integrated.

Consequently, advances in research on test anxiety may also be found when looking at advances in research on fear of failure. This has important implications for both research traditions as, on the one hand, test anxiety research may profit from paying closer attention to motivational research concerning fear of failure and avoidance motivation, and on the other hand, research on achievement motivation may profit to pay closer attention to past and present research related to test anxiety and associated processes. There is evidence that youth who are test-anxious tend to have high levels of general anxiety that are exacerbated during evaluations. This gives the impression that individuals with test anxiety are most likely to be diagnosed with generalized anxiety disorder which is triggered by the stimuli that is perceived as threatening (examination) (Conroy, 2001).

Some individuals have biological predispositions to high levels of general anxiety, making them more susceptible to the effects of being evaluated. Repeated difficulties with test-taking or other performances tend to lower self-confidence, which in turn can create conditions for more frequent and intense experiences of anxiety. Also, excessive pressure or coercion likely will worsen an adolescent's anxiety, further impairing performance, self-esteem, and motivation. Test anxiety ensues when students are faced with a challenge of passing the standardized tests that serve as an evaluative tool in order for students to graduate as a requirement (Huberty, 2009). Test anxiety serves as one of the assessment of academic challenges that are faced by students in higher institutions. Breathing techniques might not only alleviate test anxiety, but may also assist students who have other forms of anxiety. Most literature has focused on the etiology of test anxiety and little research has focused on provision of possible interventions.

2.4 The effects of test anxiety

Literature on the effect of test anxiety discovered that students who suffered from test anxiety tended to be consumed with feelings of anxiousness, worthlessness, and absolute dread in regard to their academic achievement. Excessive test anxiety often contributes to impaired test performance. In the more severe cases, test-anxiety symptoms meet DSM-IV diagnostic criteria for a social anxiety disorder. Test anxiety can produce a physiological hyper-arousal, interfering with students' mental processes and debilitating their ability to function during a test, as well as in the days and weeks leading up to a test. Due to the pressure to perform, and the perceived importance of

high-stakes testing, students' mental states and sense of emotional stability can become impaired. Rather than feeling confident about test-taking, test anxious students may become overly concerned with the repercussions of failure (Spielberger & Vagg, 1995; Black, 2005; Hembree, 1988).

Strongman (2000) discovered that test anxiety is an important factor contributing both to average differences in cognitive performance and to individual differences in performed areas. Spielberger (1995) agrees that high test anxiety is considered as one of the main factors for low performance of students at a university level. Driscoll, (2004) added that about a quarter of students are adversely affected by test anxiety which calls for serious intervention to aid students cope under stressful situations. Stress and anxiety are central components that seem to overwhelm students during examinations, presentations and oral interviews (Mohr, 2009). Anxiety and academic probation seems to be linear concepts, but the researcher is not certain whether one variable impact on the other. Cognitive behavioral perspective suggests relaxation techniques as beneficial to students with test anxiety leading to positive test gain and improvement in academic probation (Driscoll, Holt & Hunter, 2005). The present study is focusing on interventions to alleviate test anxiety in students.

A survey conducted by Cornell and Krosnick (2004) on failing a high stakes test looked at the reaction of students if they are wrongly told that they have failed the test while they passed. Students reported a wide range of adverse emotional reactions, with over eighty percent (80%) reporting that they felt depressed, worried, or

embarrassed. About half of the students said that they felt “stupid” and “less proud” of themselves. Other students reported troubling reactions by their parents or their peers. It was also found that underlying mental illness may exacerbate test anxiety. They may struggle with maintaining concentration, remembering important details, dealing with mental illness stigma, screening out distractions, meeting deadlines under pressure, making public presentations and executive functioning (Collins, Curlin, Kopels, Lett, Mandiberg, Megivern, Mowbray, Strauss, Stein, 2006). Provision of breathing exercises might assist individuals who experience difficulty to relax in anxiety- provoking situations.

On the other extreme, some students with performance anxiety may act out as a way of avoiding the risk of being embarrassed or failing. School personnel should be aware of students whose disruptive or negative behavior aligns with upcoming performance-based assignments. In addition to the adverse effects on cognitive processes, test anxiety can produce physiological hyper-arousal, negative emotional responses, as well as behavioural problems in children. Various forms of relaxation training have been used to mitigate the deleterious effects of anxiety. Two particular techniques, deep breathing and muscle relaxation, have been shown to effectively decrease anxiety levels in individuals who have difficulty relaxing in anxious situations (Larson, El Ramahi, Conn, Estes & Ghibellini, 2010).

High test anxiety reduces working memory and impairs concentration and reasoning. Highly anxious students score about twelve (12) percentile points below their low-

anxiety counterparts and the anxiety itself is considered a principal contributing factor (Cassady & Johnson, 2002). In one memorable instance, a student would tutor her small group of friends in statistics over lunch, and then fail the test the next hour while her friends went on to pass it. Test anxiety presents a serious academic impairment on all grade levels from elementary school through higher education. In spite of its low profile, it is surely one of the most pernicious emotional and academic problems among students today. Left untreated, performance anxieties can continue into adult years and restrict career opportunities and quality of life (Miller, Morton & Driscoll, 2007).

There are different theoretical frameworks which intended to expand on the explanation of test anxiety.

2.5 Theories of test anxiety

Different views have been forwarded regarding the concept of test anxiety. To begin, test anxiety has been perceived as a multidimensional construct that consists of a cognitive component, which involves elements such as worry and test irrelevant thinking and emotionality component which includes elements such as bodily symptoms and tension (Blankstein, 1992). This encompasses both the behaviour and thinking patterns regarding a pending exam or evaluation. Second views have been more absolute in that it singled out the behavioural aspects as compared to cognitive aspects. Test anxiety is described as an emotional component of human beings that manifests itself in life endeavours in a form of worry and restlessness Olatoye (2007). The source of test anxiety is more on what can be objectively perceived as bodily

changes rather than subjective experience. This view further mentioned that when this condition manifests during testing session, it is referred to as test anxiety.

2.5.1 The Multidimensional perspective

The other views regard test anxiety as a common human experience (Ruscio, 2010). It is perceived as a normal reaction that encourages one to perform better. Rafferty, Smith and Ptacek, (1997) revealed that research on coping with tests has broadened its focus from a narrow perspective on the examination situation to a broader view that includes the phases before and after the examination itself, such as the learning phase, the preparation phase, and the post-result phase. Previous research attempts were based precisely on the process of being examined without considering the pre- and post- testing dimension. There are other different views regarding the source of test anxiety and associated factors. Zeidner (1998) supported the notion that early conceptions viewed test anxiety as a one-dimensional construct while research soon showed test anxiety to be multidimensional in nature. Cumulative evidence has shown that four dimensions can be differentiated in the experience of test anxiety in the pre-exam phase: worry, emotionality, interference, and lack of confidence (Stöber, 2004).

Stöber (2004) conducted a study on one hundred and sixty two (n=162) students to examine how students cope with anxiety and uncertainty during upcoming important exams. He explored on how the four dimensions of test anxiety are associated with coping strategies. Results showed that overall test anxiety was related only to coping by seeking social support, with high overall test anxiety being associated with more

social support seeking in both male and female students. On individual inspection, worry was related to task-orientation and preparation and low avoidance coping in female students, emotionality was related to seeking social support in male students and to task orientation and preparation in female students, interference was related to avoidance and low task-orientation and preparation in both genders, and lack of confidence was related to avoidance coping in female students. The findings given only explored on the students' ways of coping during examinations, it might also be pivotal to consider the environment and circumstances that influence students to be test anxious.

Parker (2003) identified a link between academic achievement and emotional intelligence. He explicate on emotional intelligence as a concept which spans intrapersonal abilities, interpersonal abilities and adaptability and stress management. He found that students who scored poorly on emotional intelligence tests were mostly those who drop out of university (Parker, 2003).

2.5.2 The interference model

The cognitive-interference theory was discovered by Zeidner (1998) as focusing more on the attentional demands of anxiety on the cognitive system and the debilitating effects of self-related cognitions on performance. Derakshan and Eysenck (2009) cited Sarason's (1988) words that "proneness to self-preoccupation and, most specifically, to worry over evaluation is a powerful component of what is referred to as test anxiety." He explained the experience of anxiety as involving having various

task-irrelevant thoughts (e.g., self-preoccupation; worry), and that these task-irrelevant thoughts affect performance by reducing the amount of attention available to be allocated to a central ongoing task. Interference model propose that that test anxiety consists of worry and emotionality. Task-irrelevant processing and expectations of aversive consequences is viewed as the major source of test anxiety. The interference model focuses on the experience of test anxiety and does not involve the strategies test anxious individuals use to deal with anxiety- provoking situations.

2.5.3 Skills deficit model

The skills deficit model considers the strategies that are used by students to prepare for the upcoming examination. Gambles (1994) explained that anxiety and poor performance is caused by lack of knowledge about preparation and test-taking skills. The skills deficit model supports the notion that problems occur before the examination. It is caused by inadequate learning which results in poor performance and manifest in a form of emotion that results from an awareness of being unprepared for the test. The model continues to background that increasing learning strategies reduces test anxiety because students have poor understanding of the material and thus they cannot retrieve it (Chavous, 2008). The model considers mostly the practical aspects and preparedness of test anxiety. It does not consider the problems relating to retrieval of information in the examination. There are those who know the material well but have trouble retrieving it.

2.5.4 The learned drive theory

The learned drive theory is centered solely on coping with the task given and the demands of the task that create test anxiety (Bishop, 2004). Test anxious individuals are overwhelmed by task-relevant responses, leading to the reduction of the drive upon completion of the task. The “learned anxiety drive” can produce either task-relevant responses or task-irrelevant responses. Task irrelevant responses, including feelings of inadequacy, helplessness, and disturbing autonomic responses, interfere with test performance. Mandler and Sarason (1952) further discovered that in an environment where stress was minimized, high test-anxious individuals performed better, but low test-anxious individuals performed more poorly. They concluded that high test anxious persons respond to evaluative situations with negative, self-centered thinking, while low test-anxious persons react with increased learned task drive behaviors and task-relevant responses that facilitate performance.

2.5.5 The processing efficiency model

The processing efficiency theory was put forward by Eysenck and Calvo (1992). They mentioned that processing efficiency encompasses the relationship between performance effectiveness and the amount of effort or resources used to attain that level of performance. The processing efficiency theory relates the effect of test anxiety to the working memory. The assumption is that task-irrelevant processing affects the functioning of the working memory system. Baddeley (1986) proposed a working memory system which consists of three components; the central executive, an attention- like, domain-free system involved in various complex functions such as planning, strategy selection, and attentional control. He continue to mention that there

are also two “slave” systems: the phonological loop involved in the rehearsal of verbal material and the visio-spatial sketchpad involved in processing and storing visual and spatial information. Task irrelevant processing affects the central executive, and has effect on the functioning of the phonological loop. As a consequence, anxious individuals should show impaired performance in dual task situations in which the concurrent demands of the two tasks on the central executive are high.

2.5.6 The trait and state theory

The trait and state theory is clearly differentiated by Spielberger (1972). The trait-state theory recognizes the affective and cognitive processes that characterize anxiety, and identifies the stressors that evoke different levels of state anxiety in those who differ in trait anxiety. These variables include stress, cognitive appraisal of threat, and various psychological defenses. Trait-State furthermore recognizes the interrelationship between these variables. Trait-State theory identifies trait anxiety as a proneness to anxiety in general, and state anxiety, as a transitory state or condition characterized by tension, apprehension, and the activation of the autonomic nervous system. Situations which elicit the evaluation of one’s personal adequacy are perceived as ego-threatening, and are perceived as more threatening by persons high in trait anxiety than those low in trait anxiety. Differential levels in state anxiety have been shown to influence performance on a variety of tasks.

Trait-State theory holds that students high in trait anxiety are hyper-vigilant in scanning the environment for potential threat, resulting in selectively negative biases which further lead to distraction and thought interference. Trait anxiety, then, predisposes one to habitually experience emotions that interfere with test taking performance. If emotions resulting from testing are very specifically related to a point of time before, during, or after the testing situations, they are seen as state test emotions (Keogh, Bond, French, Richards & Davis, 2004).

2.5.7 Theory of academic success

Tinto's interactionalist theory was concerned about factors that influence students' success. The theory forwarded that students enter an institution with certain background characteristics such as family background, skills, abilities, and prior schooling that have shaped their levels of commitment (Tinto, 1993; cited by Guiffrida, 2006). Bean and Eaton (2000) explained students' success using attitude-behavior theory encouraging the relevance of student characteristics to success in college. According to them personality traits such as self-efficacy enhances student's resilience when faced with academic challenges. The theory add that those with developed self-concept are more confident about their ability to succeed, while those who are less confident are more likely to give up easily during difficult situations like approaching examination. More emphasis is tapped on the importance of internal locus of control and can outweigh the external locus of control given that a student has well developed self- efficacy.

Bean proposed that beliefs shape attitudes, attitudes shape behaviors, and behaviors signal intents. A student's beliefs are affected by experiences with the institution, which then evolve into attitudes about the institution, which ultimately determine a student's sense of belonging or "fit" with the institution. Tinto furthermore mentioned that students' levels of commitment are continually shaped by their interactions within the various academic and social systems of college (Kuh, Kinzie, Buckley, Bridges & Hayek, 2006). Academic integration represents both satisfactory compliance with explicit norms such as earning passing grades and the normative academic values of the institution. This entails belongingness and academic satisfaction needs.

2.5.8 Transactional stress theory

A transaction is referred to as a behavioral event and aspects thereof whose essential nature is captured by interactions between the actor, other individuals involved and the environment (Reber, 1985). Colman (2006) added that transactionalism "is a situation in which all stimuli are ambiguous, and perceptions are constructed largely from past experiences (transactions) with relevant stimuli." Stress and in particular mental stress is defined as the transaction when the cognitive focus is on the relationship between the person and the environment, such as thinking about the event's in one's life and deciding if one has the personal resources to handle those events (Matthieu & Ivanoff, 2006). The focus of transactional orientation is on the impact that thoughts and awareness have on the overall stress response of an individual. In other words, the focus of the transactional framework is on the mediation of stressful events through cognitions or perceptions (Matthieu & Ivanoff,

2006). The extent of stress also varies with the availability of a support system and coping resources in the environment (Baumann, 1992).

Transactional stress theory can be defined as “a framework that integrates stress, appraisal and coping theories as they relate to how individuals react to psychologically stressful situations and/or environments (Matthieu and Ivanoff, 2006). This is a theory of perception, which is based on the notion that an individual perceives a situation depending on previous knowledge gathered from interactive experiences with the environment (Reber, 1985). The transactional theory also places an importance on the way in which an individual analyses, subjectively appraises, the stressful event that occur in his or her environment (Matthieu & Ivanoff, 2006).

The transactional stress theory is informed by the appraisal theory (Matthieu & Ivanoff, 2006). Appraisal happens when a specific event or stressor influences an individual's cognitions of an event. This theory attempts to establish how an individual's subjective interpretation or evaluation of important events or situations elicits specific emotions (Matthieu & Ivanoff, 2006). In other words, it is an individual's evaluation of the event to determine how well he will perform on a given task in relation with his/her environment (Lazarus, 1999). Therefore, regardless of the importance or significance of the event, it may or may not be perceived as harmful or stressful by an individual depending on their interpretation thereof (Matthieu & Ivanoff, 2006). According to this theory, test anxiety may vary with the interpretation of an individual experience of it.

2.6 Other factors that influence test anxiety

Test-anxious students tend to have poorer study habits and poorer test-taking skills than other students. Test-anxiety reduction appears to benefit those students with reasonably satisfactory skills, while the remaining students with poor skills must improve upon their skills to benefit (Spielberger, 2005; Vagg & Spielberger, 1995). Anxious students seldom receive sufficient anxiety-reduction training. The students themselves are unaware that their anxieties can be treated, do not want to appear odd or conspicuous, and seldom seek treatment on their own. Williams, Davis, Johnson, Williams, Saunders, and Nebirr, (2007) asserted that the lack of academic success among students in institutions of higher learning has negative consequences on students themselves, families, workplace, and the university image. Other line of evidence reported pressure from the family and the fear of consequences of failure to be one of the contributing factors to test anxious students.

Anxiety that is experienced by individuals who are suffering from test anxiety seems to be triggered by the upcoming examination or any testing where students will be evaluated. Distress and anxiety about examinations seems to be relatively associated with approaching examinations because the levels of anxiety seems to fall to more normal, stable levels after student have left school for some time and not approaching examinations.

2.6.1 Examination distress and test anxiety

Stress is a term used in psychology and biology, which has in more recent decades become commonly used in popular parlance. Most people consider the definition of stress to be something that causes distress. However, stress is not always harmful since increased stress results in increased productivity. It is considered an umbrella term consisting of the concepts distress and eustress. Distress refers to the consequence of the failure of an organism (human or other animal) to respond adequately to mental, emotional, or physical demands, whether actual or imagined. Signs of distress may be cognitive, emotional, physical, or behavioral. Signs include poor judgment, a general negative outlook, excessive worrying, moodiness, irritability, agitation, inability to relax, feeling lonely, isolated or depressed, acne, aches and pains, diarrhea or constipation, nausea, dizziness, chest pain, rapid heartbeat, eating too much or not enough, sleeping too much or not enough, social withdrawal, procrastination or neglect of responsibilities, increased alcohol, nicotine or drug consumption, and nervous habits such as pacing about, nail-biting, and neck pains. Stress covers a wide range of phenomena, from mild irritation to drastic dysfunction that may cause severe health breakdown (Carolyn, 2007).

Another form of stress that enhances function (physical or mental, such as through strength training or challenging work) may be considered eustress. This form of stress seems to be associated with positive outcomes because individuals maintain themselves with the resources available to them to cope with the stressor and the negative symptoms of the stressor are reduced. In the case of test anxiety, it's

probably vital for individuals to be provided with ways to cope with the demands of being assessed so that the manifestations of stress emerge as eustress than distress.

Distress and anxiety about examinations seems to be relatively associated with approaching examinations because the levels of anxiety seems to fall to more normal stable levels after student have left school for some time and not approaching examinations. It has been discovered that little can be done to alter personality traits to those individuals who have traits anxiety because it seems to be an inborn and enduring pattern over a longer period. However, informing and educating students, lecturers/teachers and parents that personality differences occur ‘naturally’ between individuals might well act as a buffer against examination induced distress for some students. Similarly, providing individually- tailored remediation and study skills programmes for those who require or request them could be both beneficial and worthwhile. On the other hand, some studies affirm that despite test anxiety and academic performance, a number of other factors (low socio- economic status, self- concept, coping and self- confidence) are associated with raised distress.

The intervention strategies must be solution focused and selective for those psychologically vulnerable to the pressures and stressors associated with important examinations. Individuals who seem coping with examinations might be those who will experience less uncertainty and pressure to do well, feel less threatened about the examinations results and respond less with distress. The motive is on maintaining equilibrium between both students and the impact of anxiety by means of providing

interventions. Examination distress also seems to be associated with the consequences of failure. Pressure to succeed and gain entry to workplace and fewer career opportunities should a person fail to achieve or pass, provide possible explanations for the high levels of distress and anxiety because where the need to do well is extreme, stress increases. There are also other aspects affecting students' academic performance which manifest as co-morbid with test anxiety (home situations, HIV/AIDS, lack of support and failure to adapt) (Hodge, 1997).

2.6.2 Adaptation to stress- provoking situations

Stress seems to be a central component of test anxiety and also motivates people to adjust their behavior to meet changing demands, as when we study for upcoming exams. Two theories of adaptation to stress-provoking situations have been identified and are considered to be useful in gaining a deeper understanding of how an individual reacts to stress and the processes that occur.

2.6.2.1 The general adaptation syndrome

The general adaptation syndrome is defined as the sum of all non-specific, systemic reactions of the body which ensue upon long continued exposure to stress. The concept of general adaptation syndrome was coined by Hans Seyle referring to non-specific response to harmful stimuli (Mohr, 2009). A stressful event is transformed into a psychological stressor if the individual's reactions to the event are based on cognitions, believing that the stressor will have an adverse effect on his/ her overall well-being (Matthieu & Ivanoff, 2006; Everly & Lating, 2002). Seyle also contended

that once increasing stress reactivity has reached an optimum level, which is person specific, and then any additional stressor or stressful event can contribute to the onset of physiological process that can result to a disorder or a disease (Seyle, 1956). Consequently if stressful situations persist, the strain of responding to such situations can come cumulatively detrimental, either psychologically or physically.

General Adaptation Syndrome is involved in two major systems in an individual's body (Zuck, 2002; Seyle, 1956). These systems are the nervous system and the endocrine system. Seyle also believed that if stress is not dealt with appropriately, anxiety manifest itself in three progressive stages (Sadock & Sadock, 2007; Zuck, 2002). According to the general adaptation syndrome, the first stage is called the alarm reaction; during this stage people become aware of the presence of the stressor. On the biological level, the sympathetic nervous system becomes energized, helping a person cope with the stressor. However if the stressor persists, people move into the second response stage: resistance. Adaptation is ideally achieved during the second stage. The third stage, the stage of exhaustion, comes about when an individual has not dealt with or adapted to stress provoking situation (Mohr, 2009).

Stage 1- The alarm reaction

This stage is activated when the individual is exposed to sustained and excessive stress and refers to an individual's immediate reaction to a stressor (Mohr, 2009). Such a reaction only lasts for several seconds. When an individual first experiences a stressful situation, the body prepares itself for physical activity. This is the fight or

flight response (Mohr, 2009). Such a response can result in a decrease in the effectiveness of the immune system, due to resources in the body being channeled away from the digestive and the immune system, to more immediate and muscular and emotional needs, leading to an individual becoming more susceptible to illness during this stage. In a stress provoking situation, those systems responsible for immediate physical responses are activated, and energy supply to less important organs and systems, such as the liver, stomach, kidneys, and the immune system, is decreased (Matthieu & Ivanoff, 2006). This places the body in a state of emergency, where individuals often feel anxious, in anticipation of the stressful stimulus. Thus it can be concluded that if an individual is constantly exposed to a stressful stimulus, they will constantly be experiencing some form of anxiety (Matthieu & Ivanoff, 2006).

In the alarm phase, the body's defense forces are 'called to arms' and has two sub-phases for dealing with the impact of the stressor, the phase of the stressor and the counter-shock phase. The shock phase is immediate and is associated with signs of distress, such as loss of muscle tone, decreased body temperature, and decreased blood pressure. The counter-shock phase immediately follows upon the shock phase and is associated with the release of adrenaline and nor-adrenaline. These are secreted to ensure that energy is made available from the body stores, the pulse rate is increase, and the blood pressure is increased with a corresponding increase in the rate at which the blood circulates through the body and to stimulate the central nervous system (Cotton, 1990). Furthermore, in reaction to the stressor, the endocrine system secretes hormones to assist the body in maintaining internal homeostasis. However, an over-

secretion can cause damage to neural tissue, which in turn results to misinterpretation of stimuli, which could lead to a mental disorder (Cotton, 1990; Schell, 1997).

Stage 2- Resistance stage

This stage is also referred to as the stage of adaptation (Zuck, 2002). During this stage, the effects of the alarm stage begin to lessen and the body prepares to fight the stressor. People use variety of means to cope with the stressor—sometimes successfully but at a cost of some degree of physical and psychological well-being. For example, a student who faces the stress of failing several courses might spend long hours studying, seeking to cope with the stress (Feldman, 2008). The alarm reaction subsides and stress continues, a decrease in adrenocortical secretions occurs. Most of the changes that take place during the alarm reaction are reversed (Zuck, 2002). This is associated with increase in cortisol secretion with concomitant heighten metabolism, increase muscle strength, decreased swelling and inflammation, and decreased immunity (Cotton, 1990; Schell, 1997). If the stressful situation persists, the body starts to adapt to stressors that is it exposed, leading the body to feel more resistant to illnesses.

Stage 3- Exhaustion stage

If the stage of resistance is not successfully managed, people enter the last stage called exhaustion (Feldman, 2008). In order to reach this stage, an individual must have been exposed to the stressor for some time as the body stops trying to maintain such constant high levels of stress. During the exhaustion stage, a person's ability to

adapt to the stressor declines to the point where negative consequences of stress appear: physical illness and psychological symptoms in the form of an inability to concentrate, heightened irritability or in severe cases, disorientation, heart attack and a loss of touch with reality. High levels of cortisol begin to have detrimental effects that become noticeable in a psychological, physiological and behavioral maladaptation (Zuck, 2002; cited by Feldman, 2008).

2.6.2.2 Psycho- neuro- immunology and stress

Cannon (1989) in Sadock and Sadock (2007) posed a line of argument that any definition of stress that does include potentially dangerous physical responses is incomplete. He believed that people's biological responses are specific to the way they appraise stressful event. If a stressor is seen as unpleasant but not unusual, then the biological response may be different than if the stressor is seen as unpleasant, out of ordinary, and unanticipated. Psychoneuroimmunology (PNI) has given importance to the relationship between stress and its physiological effects on the body. Scientists in this growing field have discovered that stress modulates the activities of the nervous, endocrine, and immune systems. Stress and the emotional state of an individual may play a significant role in making one vulnerable to diseases (Daruna, 2004). They discovered that stress modulates the activities of the body's systems, adversely affecting their functioning to maintain health and it was postulated that stress may increase the probability of contracting diseases, such as cancers, coronary disease, and some autoimmune diseases (Lorentz, 2006).

Contemporary specialists in psycho-neuro-immunology have taken a broader approach to stress which identified three main consequences focusing on the outcomes of stress. Firstly, stress has direct physiological results; including elevated blood pressure, decrease in the immune system functioning, increased hormonal activity and psycho-physiological conditions. Stress serves as one of the significant factors that may cause an upset to homeostasis. When an individual can no longer adapt to a stressor, homeostasis is not maintained. The body cannot continue its normal functions. Stress causes chronic suppression of the immune system, increasing the risk for contracting certain diseases (Melmed, 2001). Secondly, stress leads people to engage in behaviour that is harmful to their health including increased nicotine, drug and alcohol use, poor eating habits and decreased sleep. Most major theories of addiction postulate that stress plays an important role in increasing drug use and relapse (Sinha, 2001). This might also be associated with hyper-arousal and atypical behaviours involving a change in appetite. Lastly, stress produces indirect consequences that result in declines in health: a reduction in the likelihood of obtaining health care and decreased likelihood of seeking medical advice. Some harmful activities serve as coping mechanisms that bring positive reinforcement due to symptom relief after drug abuse and other maladaptive activities (Sinha, 2001).

2.7 Test anxiety and the context of a higher institution

It was reported by the Council of Higher Education (2007) that about twenty two percent 22% of students who entered the university system, graduate within four years. Most institutions in South Africa were concerned about poor success rates by course to reach averages of seventy percent (70%) and below with graduation rates

being one percent (1%) or below. This is associated with varying factors where preparedness for university was found to be one of the factors. Nicholas (1996) suggested that the increase of access to universities in South Africa by underprepared learners necessitates the evaluation of their needs in order to avoid high drop-out or failure rates.

Gallagher, Golin and Kelleher (1992) discovered that college students have learning skill needs when approaching examinations. The findings indicated that overcoming procrastination and problems with public speaking anxiety were the most prevalent personal concerns of students, with fifty two percent (52%) and forty five percent (45%) of students reporting a high to moderate need for assistance regarding these problems. Other items that were associated were fear of failure, controlling anxiety and jittery feelings during exams. Forty five (45%) of students would like to learn better test-taking strategies and 31% indicated the fear of failure being a major concern. These findings encourage fundamental academic support and strategies to reduce academic performance impediments in institutions of higher learning (CHE, 200/2001). Nicholas (2002) recommended group counseling as the preferred form of intervention to students experiencing study skills problem and test anxiety. A study conducted by Norris (2008) in University of Fort Hare with one hundred and fifty seven 157 students revealed test anxiety as the least prevalent call for concern where time management was the most prevalent factor. This indicates that there might be mitigating factors that lead to test anxiety despite test taking itself. Any form of intervention should involve a comprehensive treatment that engulf and correspond to student needs.

Irrespective of above information, many students are still unwilling to seek psychological assistance. The reasons for this may include perceived stigma associated with disclosure of mental health problems, which may contribute to further problems such as feelings of fear, shame, and guilt on the part of individuals who have these diagnoses, which may in turn contribute to these students having more academic problems.

A study conducted by Kieffer, Cronin and Gawet (2005) identified an increase in alcohol consumption during examinations and most students mentioned that they used alcohol to self-medicate and reduce tension due to worry about upcoming examinations. This may be extended by unfamiliarity and fear of seeking professional help as Perkins (1999) emphasized that assisting students in managing stressful situations rather than alcohol usage as an escape mechanism will also decrease the chances of other anxiety-related problems later in life. Collins et al., (2006) conducted a survey on 350 students and results indicated that 54% believed that their campus pays “only a little” or “no attention at all” to psychological problems and academic challenges.

Other line of evidence indicates that many students indicated that they utilized indigenous healers and religious healers as their preferred means of assistance for the concerns which they indicated. According to Cocks and Møller (1997), about eighty-three percent (83%) of scholars purchase traditional medicines and the rate of use mostly increases during periods of stress such as end-of-year examinations and sporting competitions. It is not clear whether the use of traditional medicines is for

alleviation of anxiety of or is for individual purposes. On the other hand, O'Connor (2001) have identified that institutions are increasingly recognizing that mental health is an important factor which contribute to students' academic success. For example, students with an underlying psychological problem (e.g. depression) may experience difficulties during test taking. He further recommended improvement in counselling centers to run various workshops and programmes which may assist students collectively. In view of this information, the oblivious component is mostly attached on intervention programmes rather than the difficult experiences of students which most research has been based on.

2.8 Test anxiety and relaxation training

The breathing and relaxation techniques can result in individuals' increased focus on the task at hand rather than on their level of anxiety. Deep breathing can be defined as slow, diaphragmatic breathing that balances out the oxygen and carbon dioxide levels in the body (Nassau, 2007). While utilizing diaphragmatic breathing, it is important that air is inhaled through the nose and exhaled through the mouth. In response to this sensation, the body will react with less severe symptoms in a time of high anxiety or panic (Zuercher-White, 1998; cited by Larson, El Ramahi, Conn, Estes & Ghibellini, 2010). The author recommended that when training individuals how to utilize this technique, inform them of the purpose of the training and what the outcome of the techniques will be.

A longitudinal study conducted over two years with 64 post-baccalaureate premedical students investigated perceived experience of test anxiety (Paul, Elam, & Verhulst, 2007). The students were taught to utilize deep breathing techniques to reduce their anxious feelings. The students' self-reports after the intervention indicated that they felt less test anxiety, more relaxed, and more confident. The longitudinal study was based on solitary findings to verify the hypotheses; however the study did not consider the long term effects of the intervention. Clark, Edwards, Thwala and Louw, (2011) examined the yoga influence on anxiety on 37 participants. The control and the experimental group were compared and no significant results were found but there were improvements in the results of the post test.

Progressive muscle relaxation is a process that involves decreasing the physiological aspects of anxiety while distracting the individual from their awareness of anxious feelings (Nassau, 2007). The progressive muscle relaxation technique consists of a sequential tensing and relaxing of different muscle groups. The individual progresses through the major muscle groups in the body, usually progressing from the head and neck muscles to the legs and ankles, or vice versa. Larson, El Ramahi, Conn, Estes, and Ghibellini, (2010) conducted a study examining the effects of two types of relaxation training with fifty five high school students' levels of anxiety using an experimental control group design. Results showed that both behavioral relaxation and progressive muscle relaxation techniques produced significantly lower anxiety scores in the experimental group as compared to the control group. The findings of the study were based on the scores of the scale and it has not been given whether the

participants qualitatively understood the qualitative meaning of test anxiety and has been explicitly on anxiety in general, not test anxiety.

Zaichkowsky and Zaichkowsky (1984), cited by Larson, El Ramahi, Conn, Estes, and Ghibellini, (2010) found that children as young as nine years of age can learn stress control in a short period of six weeks. Children were taught progressive muscle and imagery-based techniques to control physiological arousal (i.e., heart rate, respiration, and skin temperature). The authors found decreases in all three of the children's physiological responses to anxiety. In a more recent study, Lohaus and Klein-Hessling (2003), utilized progressive muscle relaxation in an effort to reduce test anxiety in 160 fourth- and sixth grade students. They found that relaxation techniques can have a more significant calming effect in children over the short-term (i.e., five sessions) as compared to additional training sessions (i.e., ten sessions). These results suggested that children are capable of learning relaxation techniques over a relatively short period of time. It is clear from previous research with both young adults and children, relaxation techniques can reduce test anxiety. The concern that can be brought into consideration is the continuing effect of anxiety on students and the progressive failure due to test anxiety in higher institutions.

2.10 Breathing exercises and the experience of breath

Breathing is an eternal act from conception to death. Its takes place pre-consciously in a manner that one can be aware of breath and can shift his/her mind to other activities while he/she is breathing. Edwards and Edwards (2007), explored on the experience

of breath and viewed breath as a constant life energy flow, within and between our bodies and the wider world and breath is comprised of our main form of access to and energy exchange with the universe. They further mention that one may live two months without food, two weeks without water but only a few minutes without air. They also introduced a mnemonic called SMILE for psychological skills training programme which encompass different forms of breath. It stands for Self confidence, Motivation, Imagery, Learning and Energy.

Firstly, self-confidence breath refers to relaxed abdominal breathing accompanied by imagery of successfully completing each sequential moment of a particular activity. The experience is one of relaxed arousal with rewards as each phase is successfully achieved. Repeated rehearsal of this breathing pattern in the imaginary and actual situation, accompanied by any form of repetitive rewarding for each moment, guarantees self-efficacy and top performance which is one of the deficiencies in test anxiety. Secondly, motivational and goal orientated breathing refers to relaxed abdominal breathing while listing in one's mind or rehearsing an already established list of motivations and goals. Thirdly, when normal breathing is accompanied by imagery, in which all the senses are used and all the movements felt, significant gains are made, as the brain and neuromuscular system groove the same patterns in imagery and actuality. Fourthly, is the learning and focusing breath following relaxed deep, lower abdominal breathing with sunken, relaxed shoulders, every inhalation is visualized as bringing more focused and concentrated vital energy into the lower abdominal core of the body, while the sporting situation is imagined in great detail. Lastly, is the energy breathing which focus on the breathing rate and regulation. In

order to heighten arousal the in-breath should be longer than the out-breath. In order to lower arousal the out-breath should be longer than the in-breath.

The programme was evaluated on a group of rugby players to assess its effectiveness. Under 21 rugby players filled a 28 item questionnaire Bull's Mental Skills questionnaire which measures imagery, mental preparation, self-confidence, anxiety and worry management, concentration, relaxation, motivation and total mental skills. The programme was run on a weekly basis for four months. Results indicated significant improvements in imagery ability, mental preparation, self-confidence and overall mental skills. There were also improvements on the other items.

Breathing rate is approximately one quarter of a heartbeat per minute. If negative heightened arousal in the form of bodily anxiety is experienced, one may overcome this by breathing in to the count of five heartbeats and out to the count of ten heartbeats. The SMILE mnemonic involves the major components which are mostly perceived in individuals with test anxiety; lack of motivation and energy, struggle to relax and retrieval of information and preparedness. Breathing skills are related to spiritual traditions and entails the connection in African ancestry encompassing the spirit of life that is beyond death (Hergenhahn, 2001). According to Edwards (2011) breath forms the principle of life and consciousness. He also emphasized the importance of the flow of breath as forming essence of our bodiliness, vibrating our core of being-in the world. One experiences its reassuring rhythms in harmony with nature and during rest.

Loehr and Migdow, (1999) asserted that individual human life in this world begins with the first breath of an infant and lasts about one hundred million breaths. When we die, we leave this world with one last clavicular breath. During arousal any sensation, movement, feeling and thought affect the flow of breath as in the case of being anxious. This flow provides a measure of the quality and quantity of life energy. It is a typically unconscious and forgotten fact of life, in its reality as a finite number of breaths and breath taking moments (Edwards & Edwards, 2007). The healing process and sense of self begins when the unconscious material is brought into conscious so recognizing the breath taking serve as a mindfulness technique (Zimberoff & Hartman, 1998). It might assists with conscious experience without judgment and automatic response. This might help student who are overwhelmed by catastrophe of consequences of failure while they are being evaluated.

The meta- analysis conducted by Ergene (2003) on effective interventions on test anxiety reduction programme found behavioral and cognitive interventions to be effective in reducing test anxiety. He also discovered the effectiveness of combined techniques in reducing test anxiety for example; behavioral and skill focused approach combined produced high effects as compared to single approach. Spielberger (2005) recommended that test anxiety reduction should be integrated with study habits and test-taking skills improvement which will involve mental rehearsal of positive studying and test-taking attitude. Test anxiety in students was found to be inversely proportional to their assessment marks.

Miller, DeLapp and Driscoll (2007) discovered that students who scored high on tests had low test anxiety as compared to those who scored low on tests. They assigned 36

participants in grade 5-7 into control and intervention group. They found that the intervention group had good results after the anxiety reduction programme as compared to the control group. Wolpe (1958) viewed anxiety and relaxation as agonistic in such that a person cannot feel anxious in a relaxed state. Relaxation techniques therefore serve as a counter- action against anxiety. However, the multimodal nature of test anxiety which involves worry and emotionality in response to fear of test should be considered. Students might lack skills to deal with test anxiety directly in the context of evaluation rather than bodily aspects.

2.11 Conclusion

The research on test anxiety appears to have existed many decades but still continues today. It emerges as a multifaceted concept which engulfs different views centered on its etiology and possible interventions. The bio-psychosocial perspective seems to have contributed more on integrated view of dealing with test anxiety. A line is not easily drawn between normal and abnormal test anxiety. Most research has been on addressing issues of harm and consequences of test anxiety for example; poor academic performance being associated with test anxiety. Different interventions have been recommended, this study focuses more on whether breathing exercises are helpful when dealing with test anxiety.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with the methods and the design that were used for data collection. According to Mouton and Marais (1996) research methodology the “how” part of the study. Struwig and Stead (2007) added that research methodology involves the procedures and techniques used to collect and analyze data. The chapter indicates how data were collected and considers methods, procedures and instruments used in the study.

3.2 Methodology

3.2.1 Research technique

A research technique is a plan for conducting research which is implemented to find answers to the researcher questions (Gall, Borg & Gall, 2003). Quantitative research method was employed in this study. Quantitative research focuses on collecting data that lead to dependable answers to important questions, which is then reported in sufficient detail that it has a meaning to the reader. Quantitative data are data that can be sorted, classified, measured in a strictly objective way, which then makes their interpretation unambiguous and independent of individual judgments (Sarantakos, 2002). Sarantakos (2002) also added that the advantage of a quantitative method is that it is objective, easy to replicate and so has a high reliability; results can be reduced to a few numerical statistics and be measured so that comparisons can be

made. The benefit of using the pre-test post- test design is that the researcher will collect useful information that will allow the researcher to examine the effect of the independent variable (breathing techniques) on the dependent variable (students with test anxiety) (Shaughnessy, Zechmeister, & Zechmeister, 2009). Participants were assigned to both control and intervention group following which an intervention to deal with anxiety will be done with the intervention group. Results obtained from both groups were compared pre-test and post-test to see if there are any significant differences.

3.2.2 Participants

A total of hundred (100) students participated in this study. Fifty five percent (55%) of the participants were females and forty five percent (45%) were males. Sixty nine (69) participants had ages ranging between 18 and 25 years and thirty one (31) of the participants had ages ranging between 26 and 32 years. Sixty (60) participants completed the intervention programme in the pre- and post test. The control group had forty (40) participants.

3.2.3 Sample

The researcher was aware that it was impossible to include the entire population in the study. Therefore, a sample of students was drawn to represent others then the findings were generalized to the population. The sample was drawn from registered students at the University of Zululand main campus. All the participants were Africans by Race. A convenience sampling was employed to this study. Sanders

(2010) consider the use of convenience sampling as manageable, less expensive and not time consuming. This method of selecting participants made it feasible and cost effective to obtain the participants of this study. Participants were obtained from the four (4) different faculties of University of Zululand including Arts, Commerce and Law, Science and faculty of Education.

3.2.4 Measuring instrument

The ten item Westside Test Anxiety Scale was used to collect data from the participants of this study. This scale was developed and validated by Richard Driscoll (2004). The Westside Test Anxiety Scale was designed to identify participants with anxiety impairments who could benefit from anxiety-reduction and yields a general test anxiety score. It consists of 10 items, each using a likert response scale where 1 = “never true” and 5 = “always true.” It is a brief screening instrument meant to identify students with test anxiety (Larson et al., 2010). To make sure that the scale is understandable to participants, a pilot study was conducted to a few students before the actual study was conducted. Pilot study is the preliminary use of a research procedure designed to identify problems or omissions before the main study (Weathington, Cunningham & Pittenger, 2010).

Driscoll (2007) explained that the scale was constructed to measure anxiety impairments with six items assessing incapacity (i.e., memory loss and poor cognitive processing) and four items measuring worry and dread (i.e., catastrophizing) which interferes with concentration. Scores for the two subscales, incapacity (items 1, 4, 5,

6, 8, & 10) and 8 worry (items 2, 3, 7, & 9) are obtained by summing the respective item responses. A total score is obtained by adding up the scores and dividing by 10, where higher scores indicate a greater level of test anxiety (Driscoll, 2004). The mean point of the scale is two point five (2.5) Participants who obtained the score of more than two point five (2.5) were regarded as test anxious and they were assigned to the intervention group.

3.2.5 Procedure

The permission to use students as participants of the study was obtained from the ethics committee at the University of Zululand main campus. Permission for organization of the meetings with the participants was obtained from the Lecturers of different faculties considering that data was collected prior to commencement of examinations. Participants in the intervention group attended breath based psychological interventions workshop which took three (3) sessions in one week. The sessions were held in Arts Auditorium in the Faculty of Arts Building. Participants were encouraged to attend the workshop and they were reassured that the study is not for the purposes of collecting data only, but it is intended to form intervention programme for students which would be implemented in the Student Services Department (SSD) to aid students with such problems. The advantage was that students who participated in the research were the first to explore the intervention programme.

Workshop 1

The first session contained the introduction of the workshop, aims of the workshop, information about breath based interventions and procedures on the length of the workshop the benefits of attendance. Participants gave their understanding of test anxiety and they were given information by the researcher on test anxiety. The aims and objectives were;

- Assist students recognize symptoms of test anxiety
- Help students understand the causes of test anxiety
- Implement strategies to prevent or manage test anxiety symptoms, build confidence and improve academic performance.

Workshop 2

The focus of the second session was on teaching participants breathing techniques when faced with examinations or other evaluative situations. The session comprised of two (2) sections;

- The first section was on breath consciousness where participants count the number of their breaths per minute. They were instructed to have eight (8) breaths per minute including inhaling and exhaling. They were also encouraged to have three (3) seconds per inhaling and six (6) seconds per exhaling (Edwards, 2008).
- The second section focused on teaching participants breathing retraining which involves imaginal thinking. They were instructed on imagining

anything that calms each of them. It might be a calm sea, the sky, the sound of birds the clouds or God. They were instructed to take a deep breath which involves breathing in with your nostrils and breathing out through your mouth. They were also taught on holding your breath and breathing through your mouth. Diaphragm breathing was the last technique where participants were taught on inhaling and exhaling through the stomach. Then, participants were instructed to imagine it is the examination day while they were taught the techniques.

Workshop 3

The last workshop encouraged participants to reflect on their understanding of test anxiety, breathing techniques and their experience of the workshop. It helped the researcher to check whether the participants had a clear understanding about the workshop as compared to prior the workshop. It also helped the participants to:

- Be aware of the effect of test anxiety.
- Be aware of the causes of test anxiety.
- Know the possible economical ways of dealing with test anxiety.

The questionnaires for feedback were filled in front of the researcher to assist the participants and make sure that they understand the questions of the feedback form. The participants also counted the number of their breaths per minute to assess whether there was a difference prior to the intervention. The Post- test was done after completing the workshop.

Participants in the Control group were invited for the meeting of Brawam' Siswam which was founded by the Psychology Department which on Thursdays every week. Participants attended one session at Arts Auditorium in Arts Building at the University of Zululand main campus. The mentoring of the programme did not involve teaching the participants breathing techniques. The Post-test was done after the participants attended the mentoring.

3.2.6 Informed consent; confidentiality and anonymity

Participants were given a full explanation of the study. The consent form was explained thoroughly. Participants were informed about the permission to conduct research and using students as participants. They were informed about their rights to decline at any stage should they fell uncomfortable. Participants were informed about confidentiality. The names of the participants were not used in this study. Age, gender and signature were only considered for statistical purposes and proof of attendance. Ethical considerations were also maintained in the process of data collections. The participants were also informed that the study is intended for research purposes, providing possible intervention programmes and improving their coping skills from the psychological perspective.

3.2.7 Scoring

The Data that was collected was scored by the researcher with assistance of the Statistician. Information on scoring is reported in chapter 4.

3.2.8 Data analysis

To make sense of data collected from the participants, Statistical Package for Social Sciences (SPSS) will be used. SPSS organizes quantitative research data into various statistical formats to determine the relevance of variables associated with the research topic. It is a user-friendly software package for the manipulation and statistical analysis of data. The package is particularly useful for students and researchers in a number of fields. The benefit of SPSS is that the data is technically analyzed with modern technology which makes it easier to manage data (Landau & Everitt, 2004: 4). It also reduces error of manual scoring by hand.

CHAPTER 4

ANALYSIS AND INTERPRETATION OF DATA

4.1 Introduction

This chapter contains the analysis and interpretation of data that was received from the participants of this study. Struwig and Stead (2007) explained that sometimes it is difficult to make sense of the raw data. In most cases the data is often large and it is difficult to make connection between pieces of information. In order to make sense of the raw data, it is first necessary to summarize it by coding it and analyzing it through a certain programme which might be qualitative or quantitative analysis programme. This chapter assisted the researcher to assess the responses of the participants and examine the findings to verify the hypothesis of the study.

4.2 Control group pre and post-test demographics

Forty (40) participants were selected to the control group. In the forty (40) participants, twenty three (23) were females and seventeen (17) were males. Twenty nine (29) of the participants had ages between eighteen (18) and twenty five (25). Eleven (11) of the participants had ages between twenty six (26) and thirty two (32). Table 1 and 2 shows the demographics:

Table 1: Distribution of participants by gender (n=40)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Males	17	42.5	42.5	42.5
Females	23	57.5	57.5	100.0
Total	40	100.0	100.0	

Table 2: Distribution of participants by age (n=40)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid between 18 and 25	29	72.5	72.5	72.5
between 26 and 32	11	27.5	27.5	100.0
Total	40	100.0	100.0	

4.3 Pre-test and Post- test results of the control group

Individuals who were assigned to the control were found to be below the mean of two point five (2.5) in the scale. The means of the pre-test and post-test control group were compared. Results are given in Table 3 and Table 4 below:

Table 3: Means of the control group (Continued on Table 4)

		Items				
Control Group		It is hard for me to concentrate when exam is closer.	I worry that I will forget after studying	During exams, I'm scared that I may fail.	I lose focus and cannot remember what I've learned	I remember the answers after the exam is already over
pre-test	Mean	2.4250	2.2750	1.7750	1.5750	1.9250
	N	40	40	40	40	40
	Std. Deviation	1.31826	.96044	.97369	.87376	1.14102
post-test	Mean	1.6500	1.6250	1.6750	1.7250	1.8000
	N	40	40	40	40	40
	Std. Deviation	.73554	.70484	.79703	.87669	.85335
Total	Mean	2.0375	1.9500	1.7250	1.6500	1.8625
	N	80	80	80	80	80
	Std. Deviation	1.13007	.89866	.88554	.87294	1.00308

Table 4: Means of the control group (pretest and posttest)

		Items				
Control		I become too worn out to do my best on the exam.	I feel detached or not really myself during exam	My mind wanders during important exams	After an exam, I worry about whether I did well enough.	I avoid studying because I feel the results will not be good enough
pre-test	Mean	2.3000	1.7000	1.9750	2.7250	1.8000
	N	40	40	40	40	40
	Std. Deviation	1.22370	.99228	.99968	1.33949	1.06699
post-test	Mean	1.7000	1.6750	1.5500	1.5500	1.5750
	N	40	40	40	40	40
	Std. Deviation	.96609	.91672	.84580	.71432	.81296
Total	Mean	2.0000	1.6875	1.7625	2.1375	1.6875
	N	80	80	80	80	80
	Std. Deviation	1.13628	.94927	.94459	1.21950	.94927

Table 3 and 4 shows the means of the control group of the participants. The results of the control group were valid and most of the respondents were below the mean of each item of the scale. In the pre-test control group, item 4 in Table 4 had a highest mean. Most of the respondents in the control group obtained a high score on the item that after the examination is over they become worried whether they did well enough. Test results indicate that the respondents who are low on test anxiety worry about the output of the examination. The first item in Table 3 had a high mean closer the mean point of the pre-test group. It is hard for respondents with low test anxiety to concentrate on the material when the exam is closer. Item 2 of Table 3 also had a high mean score in the pre-test control group. Most of the participants worry that they will forget the information that they have encoded after studying. Respondents obtained

high scores on these 3 items while the scale indicated that they were low on test anxiety.

The lowest score in the pre-test control group was obtained in item 4 of Table 3. Least of the respondents loses focus and cannot remember what they have learned. It is interesting that item 2 in Table 3 was among the highest entailing that respondents worry that they will forget the information that they have encoded, while most of the participants do not struggle with retrieving information during examination. The worry happens in the preparation phase. Respondents in the post-test group obtained low mean scores in most of the scale items. The highest score was obtained on item 5 on Table 3. It appears that some respondents remember answers after the exam is over. There are certain reasons for respondents to obtain a high score on the item. One reason could be that post-test data collection was done after they have written some examinations. Some respondents reflected on their experience of the examination. Another reason for obtaining low scores could be they were familiar with the test items or the maturational process and that they assumed they have received the intervention.

4.4 Intervention group pre-test and post- test demographics

Sixty (60) participants were selected to the intervention group. In the sixty (60) participants, thirty five (35) were females and twenty five (25) were males. Forty (40) of the participants had ages between eighteen (18) and twenty five (25). Twenty (20)

of the participants had ages between twenty six (26) and thirty two (32). Table 5 and 6 shows the demographics:

Table 5: Distribution of participants by gender (n=60)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid male	25	41.0	41.7	41.7
female	35	57.4	58.3	100.0
Total	60	98.4	100.0	
Total	60	100.0		

Table 6: Distribution of participants by age (n=60)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid between 18 and 25	40	65.6	65.6	65.6
between 26 and 32	20	34.4	34.4	100.0
Total	60	100.0	100.0	

4.5 Pre-test and post- test results of the intervention group

Individuals who were assigned to the intervention were found to be above the mean of two point five (2.5) in the scale. The means of the pre-test and post-test intervention group were compared. Results are given in Table 7 and Table 8 below.

Table 7: Means of the intervention group (continued in Table 8)

		Items				
Intervention		It is hard for me to concentrate when exam is closer.	I worry that I will forget after studying	During exams, I'm scared that I may fail.	I lose focus and cannot remember what I've learned	I remember the answers after the exam is already over
pre-test	Mean	3.0667	3.4167	2.7167	3.0000	3.3667
	N	60	60	60	60	60
	Std. Deviation	1.19131	1.10916	1.24997	1.07357	1.11942
post-test	Mean	1.5333	1.7000	1.7667	1.7333	1.7167
	N	60	60	60	60	60
	Std. Deviation	.59565	.74333	.74485	.77824	.73857
Total	Mean	2.3000	2.5583	2.2417	2.3667	2.5417
	N	120	120	120	120	120
	Std. Deviation	1.21337	1.27547	1.13015	1.12969	1.25622

Table 8: Means of the intervention group (pre-test and post-test)

		Items				
Intervention		I become too worn out to do my best on the exam	I feel detached or not really myself during exam	My mind wanders during important exams	After an exam, I worry about whether I did well enough.	I avoid studying because I feel the results will not be good enough
pre-test	Mean	3.6333	3.1667	3.3500	4.1500	3.2167
	N	60	60	60	60	60
	Std. Deviation	1.02456	1.16687	1.08651	.95358	1.31602
post-test	Mean	1.5833	1.5333	1.5667	1.5833	1.7000
	N	60	60	60	60	60
	Std. Deviation	.71997	.72408	.74485	.67124	.74333
Total	Mean	2.6083	2.3500	2.4583	2.8667	2.4583
	N	120	120	120	120	120
	Std. Deviation	1.35532	1.26790	1.28923	1.52808	1.30864

Table 7 and 8 shows the means of the intervention group of the participants. The results of the intervention group were valid and all of the respondents were above the mean of each item of the scale. Although the results of this study were not significant, there were remarkable benefits of the exercise.. No significant results were found when results of the intervention group post-test were compared to results of the control group post-test. However, certain changes in the results were noted. The highest mean was in item 4 of Table 8 and was closer to the maximum point of the scale. Item 4 involves a component of worry and dread which might lead to catastrophizing about the situation. Respondents in the intervention group worry excessively whether they did well enough after the examination. The major

component of test anxiety in the intervention group is based on the post examination phase. The second high item in the intervention pre-test group was on item 1 in table 8. Participants in the intervention group become too worn out to do their best on the examination. The reason for excessive worry related to whether they did well on the examination could be as a result of being too worn out to do best during the exam day.

The pre-test intervention group seems to be affected by preparation phase, actual phase and the post examination phase. This was discovered in the correlation between the high scores. Item 2 of Table 7 shows the effect of the preparation phase. Respondents in the intervention group pre-test worry that they might forget what they have studied before the examination. On the other hand, item 3 on table 8 was among the highest and involves the actual phase of test taking. Most of the respondents in the intervention group pre-test reported that their mind wanders during important exams. The last high item was on item 5 in Table 7. Respondents in the intervention group post-test remember the right answers after the exam is already over. The lowest score in the pre-test intervention group was found in item 3 of Table 7. Least of the respondents in the pre-test group are concerned about failing the examination. The reason for this could be that most of the respondents are overwhelmed about the preparation and the actual phase which might have made them overlook the consequences of test taking.

Results of the post-test intervention group were captured. Results of the post-test intervention group were below the mean of the test items and the results were similar to the control group pre-test. There was a huge discrepancy between the test results of the pre-test and the post- test in the intervention group. The highest score in the post-

test intervention group was on item 3 of Table 7. After the intervention, participants were worried about the consequences of failing the exams. Item 3 obtained the lowest in the pre-test phase. Respondents in the control group also received high score on item 3 in the post test phase. The correlation between control and intervention group was discovered. The primary worry of the respondents post the intervention was on the consequences after test taking and low scores were on the items involving the preparation phase and the actual phase.

The means of the control and the intervention group had a minor discrepancy. Respondents in the control group were found to be lower on the test anxiety as compared to the intervention group. Results indicated that the intervention group result of the post- intervention were similar to the results that were obtained by the participants in the control group in the pre-test phase.

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1. Introduction

This chapter presents the discussion of results and conclusion based on the research as a whole.

5.2. Discussion of results

Findings obtained from data analysis for experimental and control groups were compared. Nachmias and Nachmias (1996), asserted that in order to evaluate the effect of the independent variable, researchers take measurements on the dependent variable, designated as scores, twice from each group. One measurement, the pre - test, is taken prior to the introduction of the independent variable in the experimental group. Secondly, the post- test, is taken after the experimental group has been exposed to the treatment. The difference in measurement between pre - test and post - test is compared between two groups. This study has furthermore explored the relationship within the two variables.

The findings of this study showed no significant difference between the control and the experimental group. The studies that were done before clearly indicate that there should be a period of at least three months of intervention before a significant change would be noticed. For example, a study by Edwards and Edwards (2007) could be a justification of the findings of the present study. The results of the post-test were below as compared to the results of the post-test. It appears that when participants are

tested with the same test items and re-tested after a certain period the results are not going to be similar. There were undoubtedly a number of factors that might have been involved in obtaining results that were not significant. Such factors are: the duration of the intervention, the context of the study, the age of the participants and perhaps the experience of the interventionist etc. Williams et al. (2007) mentioned that there are transient factors that are involved during test-taking. The tester might not be certain of the experience of each tested before test taking. This might involve familiarity with the test items (as they were tested for the first time) influence of external factors for example; daily hassles and the social circumstances. The results of the respondents in the post-test were lower than the results in the pre-test without the intervention. Some line of information has found placebo treatment as effective for participants in the control group.

Although most of the results were not statistically significant, breathing techniques were found to be effective treatment in alleviating test anxiety. The first consideration is that some research on breathing techniques favoured participants with insight on the impact of breathing. The study conducted by Edwards and Edwards (2007) was done on rugby players who are involved in sport and the intervention was run for a longer period as compared to the present study. Other studies involved smaller samples which can be easily controlled. The study of Driscoll, Holt and Hunter (2005) involved 36 participants in lower grades as compared to the present study which was done to University students in which some variable could interfere with the test results. Lastly, other studies involved a comprehensive treatment not only based on

breathing techniques. Ergene (2003) discovered that an integrated approach was more successful in treating test anxiety.

There was a discrepancy in the intervention group pre-test compared with post-test. Results of the participants were similar to the results of the participants in the control group pre-test. These findings verify the hypothesis that breathing techniques had a positive effect on the respondents. Participants in the control group were found to be concerned mostly with results when they have taken a test. Participants in the intervention group had similar findings post the intervention. The study reflected that students cannot meet the criteria for anxiety impairment but worry and dread will overwhelm them during examinations. The worrisomeness had been defined as a cognitive component which impacts on concentration. Other part of literature has revealed that test anxiety is a normal response to test taking. This might be perceived as eustress as compared to distress. It might be serving a positive outcome because respondents were high on this item but were not found to be test anxious.

The appraisal theory has supported the notion that a stressful event affects an individual's cognitive performance and determines his/her level of performance. Another explanation was on that the test anxiety is determined by the three phases: preparation, actual and post test. In this study, individuals who were found to be test anxious had high scores in the three phases, but in the post-test phase the high scores were on the post-test phase. Most of the participants reported that they worry about their results of the test and have a fear of failing the test.

5.3 Conclusion

The results of this study have indicated the effect of breathing techniques on students with test anxiety. The findings have indicated that breathing techniques had an impact on reducing test anxiety impairment on students. The study have also identified that test anxiety is differentiated to normal and abnormal test anxiety. Most of the participants can appear test anxious during examination, but their experience of test anxiety would differ. The other one might be motivated to study more due to worry, the other one might struggle to handle examinations. The study have also identified the importance of test-retest to verify the findings

5.4 Limitations of the study

The limitation of this study is that it was based only on fulltime students of the University of Zululand main campus. Findings cannot be generalized to all students at tertiary institutions. A larger sample would have been better in terms of validity and reliability. The study was dominated by African Zulu-speaking participants. The study did not compare the cultural, racial and socio-economic status differences in the experience of test anxiety and effect of breathing techniques. Most of other research had a longer period for the intervention while the present study had sessions in the period of 1 week. Edwards and Edwards (2007); Paul, Elam, and Verhulst, (2007) are a testimony to the above statement.

5.5 Recommendations for future research

Future research should consider an intervention that will involve the practical aspects of test taking combined with breathing techniques and consider the respondents' experience of the intervention. The intervention should also consider alleviating the harmful practices of coping with test anxiety. Secondly, co-relational study across universities is recommended and also having a larger sample. Lastly, future research should consider the length of the intervention because most of the studies that found significant results had a long duration to intervene on participants.

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APPENDIX: A

Westside Test Anxiety Scale

Instructions: this questionnaire consists of 24 items. We are interested in how you feel about each statement. Read each statement carefully and then pick out **one number** that describes the way you feel about that particular statement by putting a circle on it. Be sure that you do not choose more than one number for each statement.

Circle **'1'** for Not at all or never true
 Circle **'2'** for Slightly or seldom true
 Circle **'3'** for Moderately or sometimes true
 Circle **'4'** Highly or usually true
 Circle **'5'** for Extremely or always true

	STATEMENT	RATING					
1	The closer I am to a major exam, the harder it is for me to concentrate on the material.	1	2	3	4	5	
2	When I study, I worry that I will not remember the material on the exam day.	1	2	3	4	5	
3	During important exams, I think that I am doing awful or that I may fail.	1	2	3	4	5	
4	I lose focus on important exams, and I cannot remember material that I knew before the exam.	1	2	3	4	5	
5	I finally remember the answer to exam questions after the exam is already over.	1	2	3	4	5	
6	I worry so much before a major exam that I am too worn out to do my best on the exam.	1	2	3	4	5	
7	I feel detached or not really myself when I seat for important exams.	1	2	3	4	5	
8	I find that my mind sometimes wanders when I am taking important exams.	1	2	3	4	5	
9	After an exam, I worry about whether I did well enough.	1	2	3		5	
10	I struggle with writing assignments, or avoid them as long as I can. I feel that whatever I do will not be good enough.	1	2	3	4	5	

ADOPTED FROM DRISCOLL (2004)

APPENDIX B

Research Participation Consent Form

Department of Psychology

Title of Project

THE EFFECT OF BREATHING TECHNIQUES ON TEST ANXIETY AMONG STUDENTS AT THE UNIVERSITY OF ZULULAND MAIN CAMPUS.

Your consent is being sought to participate in this study. The purpose of this study is to examine the effect of breathing mechanisms to cope with test anxiety during examinations. The procedure to be followed is that you will be asked to circle the number in the scale that best describes how you feel during examinations. The risks in this study are minimal and the primary aim is to assist students cope during examinations. Participants will be first to know the intervention strategy during upcoming examinations and also contribute to the field of psychology.

Addressing issues of confidentiality records will be kept confidential and findings will be rounded off into percentages not identifying students. Your participation is voluntary. If you believe you have been in any way coerced into participation, please inform the researcher. Also, you may choose not to answer any question(s) that makes you uncomfortable. You may also choose to withdraw from the study at any time.

This research has been reviewed and approved by Institutional Review Board and is part of the requirements for the completion of my degree.

Signature of Investigator _____

Date_____

I have read all the information provided on this form, and consent to participate in this study.

Signature

Age

Date

Gender

APPENDIX C

Breath Based Interventions Programme

Objectives:

1. Recognize symptoms of test anxiety.
2. Understand the causes of test anxiety.
3. Implement strategies to prevent or manage test anxiety symptoms, build confidence and improve academic performance.

I. Signs and Symptoms of Anxiety

Physical

Sweaty palms, stomach problems, muscle tension/muscle aches, headache, rapid heart rate dry mouth, Chills/Shaking, eating/sleep disturbances, fatigue/exhaustion.

Cognitive

Racing thoughts, difficulty concentrating, numbing, going blank, racing thoughts, intrusive thoughts/flashbacks, memory problems.

Emotional

Fear or worry, numbing, feeling overwhelmed, anger/Irritability, sadness/depression, feeling lost/abandoned, feeling hopeless.

Behavioral

Restlessness, easily agitated, hyper-vigilance, increased smoking or alcohol intake, isolation/Withdrawal, change in activity level.

Problematic thinking

- * All-or-Nothing Mind-set
- * Overgeneralization
- * “Must,” “Should” Statements
- * Catastrophizing
- * Emotional Reasoning

Excessive anxiety, however, from any source, can have a paralyzing effect on your memory and ability to concentrate. If the condition is not addressed, it can lead to health problems including susceptibility to colds, even hypertension, ulcers and heart disease.

II. Understanding Causes

- Past experience of failing tests (“Overgeneralization” thinking style). Remember, one or two failed tests in the past do not mean you are doomed to fail again.
- Fear of disappointing others or yourself
- Over-emphasizing the impact of failing the exam (“Catastrophizing” thinking style). Remember, a test is just a test; it is not the end of the world. One or two failing grades does not mean a lifetime of failure.
- Blaming- the teacher, the format of the class, the test, the classroom, etc.

- Not reading the directions carefully and becoming confused
- Poor preparation, marathon studying before exam

The most common cause of test anxiety is the lingering doubt about not being prepared!

- Some even use “test anxiety” as an excuse for not preparing well for tests.
- Other Life Stressors: financial problems, health problems, pressure at work, family problems, personal relationship issues, difficulty balancing school-family-job recreation, no quiet time, traffic, crowded subway, noise, etc...

Sleep deprivation, poor diet and nutrition, history of anxiety or trauma.

Breathing Techniques

Breathing Retraining Instructions

- Sit with good posture in chair with both feet flat on floor. Relax your arms and shoulders, feel your head resting comfortably on your neck. Close your eyes.
- Imagine yourself seating in the sand of a sea and the sea breeze whispering on your ears or imagine anything that makes you in touch with yourself, it might be God, the sky, clouds or listening to the sound of birds.
- Take a normal breath in through your nose with your mouth closed. Breathe slowly and notice your stomach gently expanding (picture a baby sleeping).
- Exhale slowly through your mouth, long and slow with a quiet “whoosh” (some find it helpful to think saying the word “calm” or “relax” very slowly and while exhaling, for example: “c-a-a-a-l-m” or “p-e-a-c-e”)
- Pause; now take the next inhalation- a normal, relaxed in-breath. Flare your nostrils a bit as you feel the cool air gently rush in. When you exhale, notice the breath is now warm.
- Now imagine yourself in an examination room and imagine writing an important exam paper that will decide about your future e.g. getting a bursary or getting employment.

Thank you!

