EFFECTIVENESS OF DIALECTICAL BEHAVIOUR AND EXPOSURE THERAPEUTIC TECHNIQUES IN THE TREATMENT OF TEST ANXIETY AMONG STUDENTS WITH LEARNING DISABILITIES IN OYO STATE, NIGERIA

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ABSTRACT

Students with learning disabilities are faced with cognitive impairment and emotional problems which compound their academic difficulties and general well-being. Prominent among the emotional difficulties is test anxiety which has been noted to play a significant role in students' achievement. Despite the problems associated with test anxiety, research efforts on students with learning disabilities have been directed towards mainly meeting the academic needs of students with learning disabilities leaving their emotional needs unattended to. Available studies on test anxiety of students with learning disabilities have focused mainly on identification of factors and comparison of test anxiety of students with and without learning disabilities. However there is a dearth of studies on development of therapeutic intervention that can reduce the test anxiety of students with learning disabilities. This study, therefore, examined the effectiveness of two therapeutic intervention strategies: Dialectical Behaviour Therapy (DBT) and Exposure Therapy (ET) in the treatment of test anxiety among junior secondary school students with learning disabilities.

The study adopted pretest-posttest control group quasi-experimental design with 3x3x2 factorial matrix. Purposive random sampling technique was used to select 66 participants from three private secondary schools in Ogbomosho, Oyo State. The participants were randomly assigned to two experimental and one control groups. The instruments used were: Pupils Rating Scale (r=0.91); Stanford Achievement Test Series (r=0.72); and Westside Test Anxiety Scale (r=0.44). Seven hypotheses were tested at 0.05 level of significance. Data were analysed using Analysis of Covariance (ANCOVA), Multiple Classification Analysis (MCA) and Scheffe post hoc test.

There was main effect of treatment on test anxiety of the participants ($F_{(2, 47)} = 21.23$; $P < 0.05$). There were significant differences between DBT ($\overline{X}=25.58$) and ET ($\overline{X}=29.92$); DBT ($\overline{X}= 25.58$) and control ($\overline{X}=36.19$); and ET ($\overline{X}=29.92$) and control ($\overline{X}= 36.19$). The result also indicated that the treatment programme accounted for 42.9% of the total variance of the participants test anxiety. There was, however, no significant main effect of types of learning disabilities (dyslexia, dyscalculia and dysgraphia) on the test anxiety of the participants. No significant main effect of gender on test anxiety of the participants was observed. There were no two-way interaction effects of gender and treatment;

treatment and types of learning disabilities; and gender and types of learning disabilities on test anxiety of the participants. The three- way interaction effect of treatments, gender and types of learning disabilities on test anxiety was also not significant.

Dialectical Behaviour and Exposure Therapies were effective in reducing test anxiety of students with learning disabilities. It was recommended that conscious efforts should be made by clinical, counselling, and educational psychologists as well as other stakeholders working with students with learning disabilities to adopt these two therapies when handling test anxiety and other related behavioural problems.

Key words: Dialectical behaviour therapy; Exposure therapy, Learning disabilities, Test anxiety Junior Secondary School

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DEDICATION

This work is dedicated to God Almighty the Maker and the Director of my life and to all who have contributed to my life success in one way or the other.

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CERTIFICATION

I certify that this research work was carried out by Akanbi Samuel Toyin in the department of Guidance and Counseling, Faculty of Education, under my supervision.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Researchers who have focused their studies on meeting the needs of people with learning disabilities concentrated their attention on the causative factors of learning disabilities and meeting their academic needs (Garderen, 2007). This perhaps might be due to the fact that deficiency in academic endeavours has been noted to be the hallmark of learning disabilities (Santrock, 2005). However, other disorders associated with learning disabilities which further frustrate the general well-being of the affected people such as in their career, daily routines, family life and their social aspects of life are not focused. Specifically, the emotional needs of people with learning disabilities have been a neglected area of research (Arthur, 2003). For instance, test anxiety which indeed has been suggested to be a common and potentially serious problem among students in general and well pronounced among people with learning disability to be specific has been widely neglected (Peleg, 2009).

Learning disabilities is defined by the National Joint Committee on Learning Disabilities (USA; 1994), as a general term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities. To make it clearer, the Individuals with Disabilities Education Act (IDEA; 1975), stresses that the term does not include a learning problem which is primarily the result of visual, hearing or motor handicaps, of mental retardation, of emotional disturbance or of environmental, cultural, or economic disadvantage. In fact, the individuals with learning disability may not be physically distinguished from individuals without learning disabilities. They have average or above average cognitive skills but will require additional teaching strategies, modifications to their learning programme. In a nutshell, where there is a severe discrepancy between what the students are potentially capable of learning and what they have learnt or achieved, learning disabilities may be suspected. This may be the reason why Santrock (2005) opines that adolescents do not have learning disabilities unless they have academic problems. This means academic underachievement is the primary diagnosis of learning disabilities.

In order to prove the heterogeneous nature of learning disabilities, the Diagnostic Statistical Manual for Mental Disorder IV (DSMIV) identified three

major types of learning disorder which are reading disorder (dyslexia), Mathematics disorder (Dyscalculia) and writing disorder (Dysgraphia) Among these disabilities in learning, dyslexia has been noted to be the most common (Perlstein, 2008). While it is possible for individuals to exhibit learning disabilities in only one domain, evidence equally abound of people manifesting clusters of disabilities which reflect underlying differences in neurological function (Learning Disabilities Association of Canada, 2005).

Some students with learning disabilities perform poorly in academic tasks and assignments because they do not possess adequate strategies to recall information when necessary and as a result, school success becomes an uphill task for them (Ormrod, 2003). This might explain the reason why there is high rate of drop out from school among students with Learning Disabilities (LD). Commenting on their severe academic deficit, Haring, McCormicks and Haring (1994) assert that most students with learning disabilities score below the tenth percentile on achievement measure in reading, written language or mathematics. In most cases the handwriting of students with learning disabilities is frequently illegible and many times, they are slow writers. They also experience spelling difficulties. Many students with learning disabilities have basic underlying language problems with the mechanical and social use of language.

Apart from academic underachievement, several empirical findings (Fisher, Allen & Kose, 1996; Siegel, 2003) have demonstrated that students with learning disabilities manifest several behavioural problems. This may serve as explanation of the causative factors of learning disabilities or effects of learning disorders on the affected individuals. Results of survey have shown that between 24% and 54% of learning disabled children have behavioural problems (Schachter, Pless, & Bruck, 1991). Such behavioural problems may be external or internal, interpersonal or intrapersonal, such as aggression, juvenile delinquency, hyper-activities, restlessness, low self-esteem, anxiety disorders and withdrawal among others. Specifically, Siegel (2003), reports that individuals with learning disabilities often experience depression, low self-esteem and so on which become increasingly serious as the students get older, indicating that the learning disablities may be creating emotional problems. In brief, Smiley (2005) suggests the prevalence of mental health problems in people with learning disabilities is between 30 and 50%.

Among these behavioural problems, anxiety disorders have been reported as one of the most common forms of psychological distress for people with Learning Disabilities (Emerson, 2003). Despite difficulties in the diagnosis and classification of psychiatric illnesses in the population of people with learning disabilities (Frey, 1997), there is evidence that anxiety disorders do occur (McNally & Ascher, 1987). The research evidence available also suggests high level of anxiety disorders in children with learning disabilities which vary from 8.7% (Dekker & Koot, 2003) to 21.98% (Emerson, 2003).

It is undeniable that anxiety is a normal human experience. It is a distressing emotion, consisting of psychological, somatic manifestations and hyper-arousal (Cooray & Bakala, 2005). At optimal level, it is normal, motivational and protective, helpful in coping with adversity. However, anxiety becomes a disorder when the intensity or duration of anxiety is disproportionate to the potential for harm, or when it is manifested in the absence of recognisable threat to the individual. It involves increased levels of arousal which has the effect of disorganising rather than facilitating an individual's performance (Cooray & Bakala, 2005). If left untreated, anxiety disorders are costly to the individuals concerned and the society.

There are different types of anxiety that people with learning disabilities may manifest. These include panic disorder, agoraphobia, specific phobias, generalised anxiety disorder, social phobia, obsessive-compulsive disorder and acute and post-traumatic stress disorder. In spite of this, there is a kind of anxiety that students with learning disabilities (as well as children without learning disabilities) do manifest which is not clearly categorised in the DSM – IV by American Psychiatric Association (2000) as a class of anxiety disorders which is test anxiety. Test anxiety has been conceptualised recently as a type of performance anxiety (Powell, 2004). Tatum, Lundervold and Ament (2006), also argue that there is some likelihood that debilitating test anxiety may co-occur with other behavioural disorders such as specific phobia and general anxiety disorder. However, despite the lack of consensus regarding whether test anxiety is a subtype of performance anxiety or an anxiety disorder not otherwise specified, the fact remains that a large number of students (both people with and without learning disabilities) experience significant anxiety during test taking situation and this has negative effect on the affected individuals.

Most researchers in educational practice view test anxiety as a trait: a relatively stable personality characteristic that prompts an individual to react to

threatening situations with sometimes debilitating psychological, physiological and behavioural responses (HanCock, 2001). The degree of test anxiety ranges from mild to severe, affecting each person differently (University of St. Thomas, Minnesota USA 2002). For instance, many students can manage these distress signals by labelling them as "nerves" or a prerequisite to outstanding academic performance. Some students however, have such a difficult time dealing with test anxiety that they may change their major course or withdraw from college altogether (Counselling Centre for Human Development USF 2002).

A number of reasons could be attributed to being test anxious such as, prior negative experience with test taking that serves as the activating event, lack of adequate preparation for the test, poor time management, poor study habits, lack of organisation, lack of confidence and worry about past performance in examinations, how friends and other students are doing, negative consequences of failure and loss of self-esteem (Akanbi & Ogundokun, 2006). Among students with learning disabilities, the awareness of their inadequacies or disabilities in the affected area (e.g. reading, writing and mathematics disabilities) may also be responsible for panic in even other subject areas where they may be capable.

One of the ways to explain debilitating anxiety in students is the arousal-deficit theory. The theory suggests that individuals with learning disabilities develop excessive arousal in pressured school situations such as, mathematics performance and testing. The theory believes that, in daily life, different situations require different levels of arousal. A low level of arousal is associated with relaxing at home whereas a moderate level of arousal is needed for academic testing situation (Lerner, 1997). Excess arousal leads to general anxiety which causes inability to think clearly, disorganisation, a tendency to avoid task and even mathematics phobia (Contee, 1991).

Anxiety has many negative effects. It can block school performance of students with learning disabilities to initially learn the academic task; it impedes their ability to use or transfer the knowledge they have and it becomes an obstacle to demonstrating their knowledge in tests (Slavin, 1991). Also, it reduces working memory and impairs concentration and reasoning, and highly anxious students score about 12 percentile points below their low anxiety peers (Cassady & Johnson, 2001). High anxiety also reduces ability to comprehend and retain materials (Tobias, 1980). In addition, Topp (1989) asserts that when performance anxiety is left untreated, it

grows into adulthood where career choice is restricted and quality of life lowered. Omoluabi (1993) also opines that anxiety in most cases results in frustration which is capable of affecting the totality as well as the personality of an individual. Adeola (1987) is of the opinion that it could lead to neurotic difficulties if unattended to.

There has been conflicting research findings on the moderating role of gender on test anxiety. For instance, while researchers like Payne (1984) and Mwamwender (1993) support the notion that no significant difference exists in the general test anxiety of male and female learners, other researchers like Hembree (1988), Zeidner (1998), found significant differences in the level of test anxiety being manifested by the two genders, with females tending to score higher in measures of test anxiety. Explaining this gender differences in their own perspective, Rost and Schermer (2001) opine that girls are more emotional, have less self-control and disclose more personal information. As a result, they seem to accept anxiety more quickly, considering that they lose less regard when they report their level of anxiety as compared to boys.

Among people with learning disabilities studies continue to point to the influence of learning disabilities on students' level of anxiety and self-esteem (Valas, 1999) which in turn has impact on their academic performance and achievement (Thompson, Marcal & Marcal, 1992). These emotional problems may continue into adulthood if not addressed and treated during childhood and adolescence (Hoffman, Minskoff & Echols 1987).

Regrettably, one lives in a society that manifests negative attitude towards people with learning disabilities. This is because there is no full awareness and understanding of the nature of the disability especially in Nigerian setting. This might be the reason why Abang (1981), laments that the most neglected group of the exceptional children in Nigeria and Africa at large are those with learning disabilities. According to him, these children are neglected because their handicapping condition is invisible to the human eyes and yet they may be the largest group of people with disabilities in the country. While in Nigeria today, there are schools for the deaf, the blind and the mentally retarded, there are no provisions for children with learning disabilities. The common attitude is either the act of segregation or casting aspersion on the personality of persons with the disability. They are often regarded as lazy, stubborn and never–do-well by the teachers and parents due to the fact that there is no physical deformity or environmental factor that one can attribute their failure to and

being unable to meet up with their counterparts in academics. These set of students are often ridiculed and made jest of by their mates and colleagues for their inability to give appropriate answer to "simple question" that an average student can answer in the class. One can then imagine what the response of students with learning disabilities would be to the derogatory statements from teachers, segregation from their mates without learning disabilities, the negative comments from parents over the behaviour they are not voluntarily responsible for and their failure in academics despite all the efforts they make to succeed. Arguably, all these have negative effect on the self-esteem and self-concept of students with learning disabilities. It might even account for high rate of school dropouts and various forms of anxieties manifested by students with learning disabilities especially test anxiety.

The psychological effect of learning disabilities on parents is glaring. Research indicates that parental reaction to the diagnosis of learning disability is more pronounced than in any other area of exceptionality. This is because, if a child is severely retarded or physically handicapped, the parent becomes aware of the problem in the first few weeks of the child's life. This is not so in the case of people with learning disabilities, the pre-school development of the child with learning disabilities is often uneventful and the parents do not suspect that a problem exists. Even after a diagnosis, parents often face a whole gamut of emotions before they can come to terms with the fact that their child is learning disabled. Parents often sweep through a range of emotions like Kubler-Ross' (1980) stages of grief which are denial, guilt, blame, frustration, anger and despair. Nothing is as disturbing as parents getting to know that the causative factor of their child's problem has not been fully established and that neither the parents nor the child can be blamed for the disorder but biological factors. More frustrations often follow when parents are told there is no medication for learning disabilities and that it runs through life.

The fact that learning disability often runs into adulthood makes its effect on the affected individuals more worrisome. When left undiagnosed and untreated, it often affects the vocational and social life of the adults with learning disabilities. The negative experience of poor self-esteem, frustration, anger and alienation from adolescence can result in a self-perpetuating cycle of social failures and emotional problems that lead to more negative experiences (Mortimore, 2003). Frequently, adults indicate that their learning disabilities adversely affect their social relationship (Shaywitz, 2003). Many times, adults find that their learning disabilities also affect

vocational choice and success (Brown, 2000; Farmer, Riddick, & Sterling, 2002). Also, individuals with LD sometimes feel they must attend vocational schools rather than colleges and that their job opportunities are limited (Brown, 2000; Poussu-Olli, 2001). They often feel anxious about courses and training needed for certain occupations (Heaton & Michell, 2001). All these affect their success and self-fulfillment and above all, cause anxiety.

The history of proper research on test anxiety dates back to about six decades ago when Mandler and Sarason (1952), published a series of studies on test anxiety, how it relates to performance and moreover, provided researchers with instrument to assess individual differences in test anxiety (Stober & Pekrum, 2004;); although, Folin, Demis and Smillie had earlier conducted a research on test anxiety among medical students in 1914. Since then, there has been in flux of research publications on test anxiety bearing in mind that in educational testing, test anxiety may present a bias that may conceal the true potentials of students (Meijer, 2001). However, the trend of research on test anxiety so far has been on general populace focusing on correlates of test anxiety and other variables such as academic performance (Deffenbacher, 1978), self-esteem (Cankaya, 1997); parenting styles (Chapell & Overton, 1998; Nijhawan, 1972)and gender differences in test anxiety (D'Ailly & Bergering, 1992). Other areas include development of scales (Sarason, Davidson, Lighthall, Waite & Ruebush, 1960); construction of models (Tryon 1980; Desiderato & Koskinen 1969) and development of therapies (Ritter, 2004; Leheres et al 1994).

However, as rich as studies on test anxiety seem to be, attention is on the general populace while students with special needs who are more prone to anxiety have been widely neglected. In Nigeria to be specific, little or no known research have been conducted on the test anxiety of people with learning disabilities although studies have shown they are more test anxious than the general populace (Bryan, Sonnefeld & Grabowski, 1983; Swanson & Howell, 1996). This omission has left more space to conduct more studies on test anxiety. Test anxiety reduction intervention has been found to lower anxiety and improve test performance by as much as 12 percentile points (Hembree, 1988). Therefore, many therapeutic devices have been suggested for mastering self-regulation to diminish the effects of stress and anxiety. Among these strategies are: progressive muscle relaxation, electromyogram (EMG), biofeedback training, finger temperature biofeedback training and authogenic

training, self-efficacy training and rational emotive therapy (Leheres, Carr, Sargunaraj & Woolfork, 1994; Ritter, 2004; Akanbi & Ogundokun, 2006). It is the goal of this research work to use dialectical behavioural and exposure therapies as strategies to manage test anxiety among students with learning disabilities with the aim of reducing test anxiety, and enhancing the academic performance of the affected students.

Given the nature of complexity of the disorders involved in learning disabilities and the attached co-morbid behaviours, there is need to look for more therapeutic techniques capable of treating such disorders to assist the affected individuals. This is because most of the therapeutic packages available for treatment of most co-morbid behaviours with learning disabilities such as test anxiety are focused on people with "normal" cognitive ability. Hence such therapies may not be effective for people with learning disabilities considering the nature of their disabilities. In the light of this, dialectical behaviour and exposure therapies which have been suggested to be effective for the treatment of complex behaviour disorders relating to anxiety are considered suitable for the treatment of participants in this study.

Dialectical Behaviour Therapy (DBT) is an empirically researched psychotherapeutic treatment which employs cognitive and behavioural principles. DBT is a form of cognitive behavioural therapy specifically designed to treat adolescents with patterns of emotional dysregulation who meet criteria for multiple diagnosis including major depression, anxiety disorders, post traumatic stress disorder, bipolar disorder and also exhibits axis II traits or have an emerging borderline personality disorder. Empirically, DBT has been adapted for use with different forms of psychopathology problems including eating disorders (Safer, Teleh & Agras, 2001) and social incompetence, (Ogundayo, 2007), Most recently, DBT has been applied to different age groups including adolescent inpatients, adolescent out-patients and geriatric populations (Katz, GunaseKara & Miller, 2002;). DBT in this study will therefore be used to regulate emotion, develop acceptance, and inter-personal effectiveness and distress tolerance among students with learning disabilities in issues relating to their test anxiety.

Also, because it is not uncommon for people who are test anxious (especially people with LD) to manifest avoidance behaviour in test situation, it is imperative to use exposure therapy in order to help test anxious students and enable them master

their emotions by frequent exposure to test related situations. Exposure therapy is based on the principle of habituation that is getting used to things that are just annoying but not dangerous. Exposure therapy has been found to be effective in the treatment of many anxiety related disorders. For instance, it has been found to be effective in the treatment of social phobia, reduction of negative affective symptoms, treatment of post traumatic stress disorders (PTSD) of veterans, rape victims and persistent fears (Rothbaum & Schewartz, 2002; Foa & Meadow, 1997). More interestingly, experts who compared the effectiveness of exposure therapy alone with exposure therapy combined with other cognitive therapies found that exposure therapy alone is effective in the treatment of anxiety related disorders (Foa & Rauch, 2004; Marks, Lovell, Noshirvana, Livanou & Thrasher, 1998).

It is therefore the aim of researcher to investigate the effectiveness of dialectical behaviour and exposure therapies in the treatment of test anxiety among students with learning disabilities.

1.2 Statement of the Problem

In a test conscious society like Nigeria, research cannot be overflogged on test anxiety. This is because; a little review of past research findings would suggest a high prevalence of test anxiety among students. Among the general populace, available statistics revealed that as high as 33% of school age children and adolescents experience some measure of test anxiety, which suggests that it is a widespread phenomenon. Unfortunately, the negative consequence of this on students is antithesis of their scholastic and general well-being. For instance, research has shown that test anxiety is an important factor in students' primary, secondary and tertiary education. In students, individual differences in test anxiety play a major role not only in students' achievement, but also in their school- related motivation, academic self-concept and advancement as well as their personality development and health (Stober & Pekrum, 2004). One then begins to wonder that if test anxiety is so prevalent and so severe among students in general, how much more people with learning disabilities who have been noted to demonstrate more test anxiety than students of general populace?

It is quite surprising that while literature has established mental health issues among people with learning disabilities to be four to five times greater than that of the general population (Einfeld & Tonge, 1996); and despite the fact that learning disabilities may disrupt children and adolescents' functioning and provoke anxiety

distress, to date, relatively few studies have been conducted in this area, especially in Nigeria. This indicates that research efforts have not been fully directed towards meeting the emotional needs of people with learning disabilities. This has made it difficult to establish the relationship between learning disabilities and behavioural problems (e.g. test anxiety) The implication is that adequate intervention for this population may be limited. Therefore, given the severe nature of high level of test anxiety for adolescents with learning disabilities in Nigeria, a closer examination of these variables is necessary.

Also, the dearth of research attention on emotional needs of people with learning disabilities might also retard the success of various interventions geared towards enhancing the academic achievement of this population. From the perspective of this study, it could be assumed that two major factors directly affect the academic performance of students with learning disabilities; one is the cognitive impairment of learning disability and the other is the debilitating effect of test anxiety. These two syndromes are threats to the life aspiration and self-actualization of the affected population. The focus of experts in helping people with learning disabilities out of their problems has usually been towards solving learning problem. Hence many special education programmes have been developed to enable them improve in mathematics; reading and writing among others, while issues affecting their emotional need especially anxiety are not appropriately attended to. Therefore, a study aimed at meeting the emotional needs of students with learning disabilities who are struggling with test anxiety as a result of their academic underachievement is needed.

1.3 The Purpose of the Study

The major goal of this study is to investigate the relative effectiveness of two psychological strategies (dialectical behavioural and exposure therapies) in the treatment of test anxiety among students with learning disabilities. In addition, the study aimed at finding out which of the two treatment strategies would be more effective in reducing test anxiety behaviour. Also, the moderating effects of gender and type of learning disabilities on the treatment of test anxiety using the two therapies were also examined

1.4 Significance of the Study

The expected findings of this study would be of great significance to students with learning disabilities and test anxiety who suffer a great ordeal in facing academic tasks. It will help them overcome their test anxiety and by extension improve their academic performance, thereby living a fulfilled life.

Parents who pay huge amount of money and suffer a lot of psychological traumas in training their children with learning disabilities are expected to find the anticipated outcome of this study helpful. The study is expected to provide a platform through which they can assist their children with learning disabilities to cope with their academic and emotional problems.

The expected findings of this study would also increase the number of therapies that can be used by clinical psychologists in dealing with such a difficult to treat behaviour disorder as learning disabilities with anxiety disorders (Test anxiety). While dialectical behaviour therapy (being relatively new) has much focus on people with borderline personality disorder, its usage in treating problems like test anxiety especially in Nigeria is not common. This will therefore further establish the veracity of DBT in the treatment of emotional problem. It will also add to the empirical studies already available in support of DBT. This is equally applicable to exposure therapy.

The anticipated findings will also be of immense benefit to Nigerian teachers, who are always blamed for woeful academic performance of students, not minding their cognitive impairment. It is believed that a reduction in the level of anxiety of the target population may increase the attention of the learners thereby making class control easy and enhance the success of the teachers at work.

The outcome of the study is expected to provide Nigerian government and the policy-makers the need to focus on people with learning disabilities by providing a workable individualised education programme for them in order to actualise their life potentials. The expected reduction in the level of test anxiety and improved academic performance would serve as an eye opener or a reminder to the people in authority that people with learning disabilities can equally be assisted to achieve greater things in life if an enabling environment is provided.

1.5 The Scope of the Study

The study is limited to secondary school students with learning disabilities in Ogbomoso area of Oyo State. The participants include students in junior secondary school. Their age range is from 10 and 15 years with the mean age of 13 and standard deviation of 1.32. Students with learning difficulty or test anxiety due to environmental factors or other reasons were excluded. The study was also restricted to dialectical behaviour and exposure therapies in the reduction of test anxiety. Gender and types of learning disabilities were also used as moderating variables

1.6 Operational Definition of Terms

Exposure Therapy: In this study exposure therapy is a form of behaviour therapy in which a test anxious student confronts feelings or phobias or anxieties about test taking and relives it in the therapy situation.

Dialectical Behavioural Therapy: In this study, it is a mode of treatment designed for individuals with test anxiety with the aim of helping them validate their emotions and behaviours, examine those behaviours and emotions that have negative impact on their lives, and make a conscious effort to bring about positive changes.

Test Anxiety: In this study, test anxiety refers to an individual with learning disabilities that often experience physiological, cognitive and behavioural responses that stimulate negative feeling about an evaluation.

Learning Disabilities (Learning disorders): In this study this is the inability of a child to gain knowledge or acquire the needed skills involved in the performance of assigned, social and behavioural competence.

Dyslexia (Reading disability): This is neurological-based, often familial, disorder which interferes with the acquisition and processing of language.

Dysgaphia (Writing disability): This relates to handwriting problems, specifically partial inability to remember how to make certain alphabet or arithmetic symbols.

Dyscalculia (Mathematics disability): A persistent difficulty in the learning or understanding of number concept, counting principles or arithmetic.

Academic Achievement: In this study, this is the outcome of students with learning disabilities' performance in a given academic task to ascertain their mastery of subject matters.

CHAPTER TWO

LITERATURE REVIEW

A number of researches have been conducted in relation to some variables used for this study. This chapter therefore combs some of the relevant literature (both theoretical background and empirical review) along the following dimension.

Theoretical Literature Reviews

Nature and Characteristics of Learning Disabilities
Effects of Literacy Problems on Adolescents with Learning Disabilities
Types of Learning Disabilities
Dysgraphia (Writing Disability)
Dyscalculia (Mathematics Disability)
Dyslexia (Reading Disorder)
Causes of Learning Disabilities
Genetics of Learning Disabilities
Environment and Learning Disabilities
Self-esteem and Learning Disabilities
Anxiety and Anxiety Disorders
Etiology of Anxiety Disorders
Anxiety Disorders: Psychological Basis
Anxiety Disorders: Biological Factors
Anxiety Disorders: Family Environment and Parenting Factor
Anxiety Disorders in People with Learning Disabilities
Test Anxiety
Dimensionality of Test Anxiety
Trait Test Anxiety
State Test Anxiety
Manifestations of Test Anxiety
Cognitive Manifestation
Physiological Manifestation
Emotional Manifestation
Behavioural Manifestation
Determinants of Test Anxiety
Situational Determinants
Subjective Determinants
Models of Test Anxiety
Interference Model
\Skills – deficit Model

2.1 Theoretical Background

2.1.1 Nature and Characteristics of Learning Disabilities

The concept of learning disability has gained a variety of definitions from experts. This is needed because, according to Lerner (1997), different definitions are required for various professionals, populations, age levels and degree of severity. Lerner stresses further that different definitions also serve different purposes, including identification, assessment, instruction, advocacy and research. Hence, rather than trying to force the various attributes of learning disabilities into a single, all-encompassing definition, it must be acknowledged that these characteristics reflect different types of learning disabilities. It is therefore necessary to review some of these definitions in this research.

From his own perspective, Kirk (1962) defines learning disabilities as retardation, disorder or delayed development in one or more of the processes of speech, language, reading, writing, arithmetic or other school subjects resulting from a psychological handicap caused by a possible cerebral dysfunction and or behavioural disturbance. According to Kirk, learning disablities is not as a result of mental retardation, sensory deprivation or cultural and instructional factor. Bateman (1965) opines that children who have learning disorders are those who manifest an educationally significant discrepancy between their estimated intellectual potentials and actual level of performances related to demonstrable central nervous system

dysfunction, and which are secondary to generalised mental retardation, educational or cultural deprivation, severe emotional disturbance or sensory loss.

In the view of The U.S. Office of Education (1977), learning disability is defined as a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, read, write, spell, or do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia and developmental aphasia. The term however, does not include a learning problem which is primarily the result of visual, hearing, or motor handicaps, of mental retardation, of emotional disturbance or of environmental, cultural or economic disadvantage.

According to Ikujuni (1995) learning disability refers to the imperfectal ability of a child to gain knowledge or acquire the needed skills involved in the performance of assigned social and behavioural competence. Such disability may manifest itself through marked differences between the child's potentials and his or her actual performance. Ikujuni lays much emphasis on the fact that children with learning disabilities usually perform below average in academic and social skills although they are not blind, deaf or mentally retarded.

Abang (1995) refers to learning disabilities as minimal brain dysfunction in children of average or above average general intelligence with certain learning and behavioural disabilities associated with disorders of functions of the central nervous system. Blair and Scott (2002) also concur that learning disabilities are psycho neurological disorders that include deficits in learning at any age caused by deviations in the central nervous system and which are not due to mental deficiency, sensory impairment or psychogenicity. Also, Obani (2006), perceives individuals with learning disabilities as those who are of average or above average intelligence as measured by intelligence tests, who perform averagely, above average or sometimes very high in many school subjects but who perform very poorly and experience undue difficulty in learning to read or write or spell or in doing simple mathematical operations and calculation even with good conventional teaching remedial help.

Roger and George (2006) equally agree that learning disability is a neurological disorder that affects the brain's ability to receive, process, store and respond to information. The authors were also of the opinion that learning disability is a group of disorders that affects people's ability to either interpret what they see

and hear or to link information from different parts of the brain. These limitations, they posit, can show up in many ways as specific difficulties with spoken and written language, coordination, self-control or attention.

As diverse as these definitions are, they seem to concur on certain issues, some of which are:

i. There must be evidence of an ability to achieve at the same level with one's age mates within the same potential ability level and also perform at a pace lower than one's ability level. As a matter of fact "to be learning disable, students must have an I Q that is average or above, and show a discrepancy between their academic potential and their achievement" (Winter 1993, Rutherford, Nelson & Wolford 1986).

ii. Also, there must be a discrepancy between achievement and intellectual ability in one or more of the basic school subjects such as oral comprehension, listening comprehension, writing, reading skill, reading comprehension, mathematics and mathematic reasoning. (Heward, 2000; Lerner, 1997; Mba 1995).

iii. If a student's learning difficulty can be explained by other factors not attributable to developmental or academic problem, that student does not meet the criteria for special education (Winter, 1994).

For proper diagnosis of people with learning disabilities, Winter (1997) gives five criteria which must be met before a student can be classified as LD and placed in the appropriate special services. They are:

1. There must be an intrinsic neurological problem (i.e. faulty processing of information in the brain);
2. Intra-individual differences must be present (i.e. the student must manifest problems in learning that are unique for that child only);
3. There must be a discrepancy between the student's potential (as illustrated by testing) and his or her academic achievement.
4. The student must not exhibit any exclusionary factors (e.g. the learning problem must not be the result of mental retardation, sensory problems, limited command of English, cultural differences, and emotional illness).
5. The student must exhibit developmental and or academic problems.

Adolescents with learning disabilities often manifest diverse academic and behavioural characteristics. Academic deficits have been noted to be the hallmark of

learning disabilities. This is why Hallahan and Kauffman (1994) affirm that if there is no academic problem, a learning disability does not exist.

According to Silver (1990), between 15 and 20 percent of students with learning disabilities exhibit short attention span, distractibility and hypersensitivity. These characteristics make it difficult for these students to excel in their academics. Lerner (1997) and Heward (2003) stress that students with learning disabilities often have problems in processing auditory or visual information. These authors report that numerous researchers have documented that many students with learning disabilities have a real deficit in memory and that they lack organizational skills and have not developed an active learning style. Consequent upon this, they perform poorly in note taking. In the view of Luther (1993), many students with learning disabilities have experienced repeated academic failures, that they tend to doubt their intellectual abilities, lack resilience and come to believe that their efforts to achieve is futile. They in turn display low persistence level and give up as soon as something appears to be difficult. They learn to be passive instead of active learners. Instead of trying to solve a problem, they tend to wait passively until the teacher directs them and tells them what to do (Lerner, 1997). In academic task, they fail to associate new information with what they have already known and they do not elaborate in their thinking (Deshler, Ellis, & Lenz, 1996, Levine & Swartz, 1995).

Apart from academic problem, adolescents with LD manifest anti-social and hostile behaviours, immaturity and other social skill problem, such as accepting negative feedback, giving feedback, negotiating and resisting peer pressure because they frequently display social ineptitude; they often have difficulty making and keeping friends (Bryan 1991, Vaughn 1991).

Emotionally, adolescents with learning disabilities manifest poor self-concept and low self-esteem. These result from years of failure and frustration (Lerner, 1997), and their self-comparison with others in areas such as academics, the ability to make and keep friends and athletic prowess (Lyons, 2005). Adolescents with LD have little confidence in their ability to learn and achieve. Often too, emotional problems develop from their lack of experience of success (Lerner 1997). They often lack self-esteem and self-confidence (Silver, 1995).

U.S National Joint Committee on Learning Disabilities (NJCLD) (2008), summits that adolescents with LD often have persistent receptive and expressive oral language deficits that become more pronounced as demand increases in areas such as

vocabulary, content specific knowledge, organisation and retrieval of semantic information, basic and complex syntax, and higher-order semantic processing (e.g. figurative language form; inferencing). According to NJCLD, Meta-cognitive deficits affect students' self-awareness and self-regulation of their own problem-solving abilities and strategies for guiding, monitoring and directing their success. As a consequence of these problems, students with LD often have difficulty maintaining positive attitudes and sufficient motivation and persistence needed to meet educational expectations. NJCLD maintains that students with LD may have limited awareness of their individual pattern of strengths and challenges and their remediation and accommodation needed to support their progress.

2.1.2 Effects of Literacy Problems for Adolescents with Learning Disabilities

Underdeveloped literacy skills have profound consequences for students, families and society. These effects are academic, social, emotional and economic in nature. Students with LD are often inadequately prepared for the academic challenges presented across educational continuum from lower secondary to post secondary settings (NJCLD, 2008).

It is reported that secondary school students with LD experience significant deficits in reading and mathematics when compared to other students assigned to the same grade level; for example, 21% of these students are estimated to be five or more grade levels below in reading (National Longitudinal Transition Study II, 2003). Students with LD and /low literacy level drop out of secondary school at higher rates than the general population. The dropout rate for this group was estimated at 31.6% as compared to 9.4% for students with no disabilities (US. Department of Education, 2007). Only 11% of students with LD, as compared to 53% of students in general education population; have attended a four-year post secondary programme within two years of leaving high school (National Longitudinal Study II, 2003).

Evidence suggests that the literacy skills of many high school graduates are insufficient for success in workplace and society (NJCLD, 2008). It has been reported that low achievement in literacy correlates with high rates of poverty and unemployment (Wagner, 2000). The impact of these realities is significant to society and the consequential socio-emotional risks for these individuals are profound.

Moreover, youths with learning disabilities (LD) have been suggested to be at increased risk for suicidal behaviour. (Bender, RosenKrans, & Crane, 1999). For

example, a higher than expected number of Youth with LD was found in a survey of high school counsellors about suicide-related occurrences in schools (Hayes & Sloat, 1988 cited in Goldston, Daniel,Walsh, Arnold, Reboussin & Wood, 2006). In addition in the National Longitudinal Study of Adolescent Health, Youth with LD attempted suicide more often than Youth without LD (Svetaz, Ireland, & Blum, 2000).

2.1.3 Types of Learning Disabilities

Many authors have listed different types of learning disabilities. However, for the purpose of this research work, the emphasis will be on the major three types stated in DSM IV. Which are: reading disorder (dyslexia), mathematics disorder (dyscalculia) and writing disorder (dysgraphia).

2.1.3.1 Dysgraphia (Writing Disability)

The term Dysgraphia is not widely used in schools. One reason is that handwriting difficulties can be included under the label of learning disabilities. Another reason is that there is no consensus in the field on definition or identification process for dysgraphia (Crouch & Jakubecy; 2007). Richards (1999a) defines dysgraphia as a problem with expressing thoughts in a written form. Meese (2001) describes dygraphia as handwriting problems, specifically partial inability to remember how to make certain alphabet or arithmetic symbols. In spite of lack of consensus in definition, this research will be contented with the definition of Meese, and the focus will be on mechanics of handwriting.

Feifer (2001) classifies dysgraphia into four subtypes. The first is phonological dysgraphia, which is "writing and spelling disturbances in which the spelling of unfamiliar words, nonwords and phonetically irregular words are impaired. These students tend to have problem spelling by sounds and rely on the visual aspect of letters; therefore, because spelling is an auditory task, they will have trouble with spelling tasks. The second is surface dysgraphia where students have problem with orthographic representations of words, which makes the student rely too heavily on sound patterns; the opposite of phonological dysgraphia. Mixed dysgraphia is the third. This type refers to students having trouble with spelling tasks, a combination of the first two types. Recalling letter formations is difficult for these students to do because there are so many instructions or rules that they get confused and; therefore,

have inconsistent spelling of words. Finally, semantic / syntactic dysgraphia is a grammatical problem in which students have difficulty with how words can be joined to make complete and comprehensive phrases.

Children with dysgraphia, over 75% of whom are male (Cavey 1987), frequently display characteristics that are common to many students with learning disabilities, such as lack of motivation, inability to focus attention, perceptual disorders or lack of coordination (Cavey 1987). Students with the most severe forms of dysgraphia are unable to hold a pencil correctly or draw a straight line. Students that have it to lesser degree may be unable to copy letters or may be tired easily while writing. Still others may be able to draw or trace simple forms, but are unable to write letters or words consistently (Richards 1999b). Children with dysgraphia have difficulty forming words and sentences. Their writing production will often be of poor quality and illegible (Fischer & Rettig, 2004).

Smits – Engelsman and Van Galen (1997) conducted a study trying to find the cause of dysgraphia in children. They found that poor writers possess either an inherent noisy neuromotor system or exhibit dysfunction in controlling the inherently noisy neuromotor system. Further, their research supported that the failure to control spatial accuracy was the most significant discriminating feature between poor and good writers. In other words, writers with spatial constraints, exhibit more variability in letter, size and shape and lack consistency in letter formation. This study do not support the opinion that dysgraphia is a temporary developmental delay for children. They rather concur with Richards (1999) who asserts there is no cure for dysgraphia. However, students must be taught both compensations and remediation strategies to help them cope with or improve their writing ability.

2.1.3.2 Dyscalculia (Mathematics Disability)

The term dyscalculia is defined by Wadlington (2008) as a genetic, neurological disorder that affects an individual's ability to do mathematics. A discrepancy exists between the individual's general cognitive level and ability to comprehend and do mathematics (Mazzocco, 2005). Geary (2006) refers to dyscalculia as a persistent difficulty in the learning or understanding of number concept (e.g. 4 > 5), counting principles (e.g. cardinality – that the last word tag, such as "four" stands for the number of counted objects), or arithmetic (e.g. remembering that 2 + 3 = "5"). The condition has also been defined in a Department for Education

and Skill (DFES) document (2001) as "a condition that affects the ability to acquire arithmetic skills". According to DFES, Dyscalculic learners may have difficulty in understanding simple number concepts, lack an intuitive grasp of numbers and have problems learning number facts and procedures". Statistically, between 5 to 8 percent of individuals in all age groups have been suggested to have some form of dyscalculia (Geary, 2004).

With regard to the characteristics of Dyscalculia, some available literature reviews indicates that the children affected usually have problems in learning and remembering arithmetic facts and in carrying out calculation procedures. For instance, Farmer, Riddick & Sterling (2002) opine that some people with dyscalculia can perform basic mathematical tasks (e.g., basic facts; addition; subtraction; multiplication; division; count money), but cannot apply simple tasks to higher level mathematics. Other individual understands higher level mathematical concepts almost intuitively but cannot learn basic tasks. Still, others can do basic and or higher level mathematics, but cannot apply mathematics to real-life or new situation. Geary (2006), adds that children with dyscalculia are likely to be at risk of development of mathematics anxiety, which leads to avoidance of mathematics; this makes the acquisition of basic skills in this area more difficult.

Kosc (1974), categorise dyscalculia in six different subtypes. According to him; Dyscalculia manifests itself in many forms:

1. **Verbal:** difficulties remembering and naming mathematical terms and symbol.
2. **Practognostic:** difficulties using manipulatives or pictures when applying mathematical concepts.
3. **Graphical:** problems with writing mathematical terms, symbols etc.
4. **Lexical:** problems with reading the vocabulary and symbols of mathematics.
5. **Operational:** difficulties with mathematical operations (i.e. addition, subtraction, multiplication, division).
6. **Ideognostical:** difficulties with mathematical idea or concepts.

An individual can have one, a few or all forms of dyscalculia, resulting in different characteristics and challenges. As a result, individuals with dyscalculia often work mathematics very slowly and laboriously with extreme fatigue and frustration (Wadlington, 2008). In addition, achievement in mathematics is

significantly below student's potentials when considering intelligence and performance in other academic areas (National Center for Learning Disabilities, 2007).

One school of thought (Geary & Hoard 2001) has it that Dyscalculia is a secondary component of more general or more basic cognitive abilities such as semantic memory. However, other studies using neuro-physiological methodology (Cappellett; Butterworth & Kopelman, 2001) would suggest that number knowledge and skills may involve a more discreet domain of functioning. For example, semantic memory systems for numerical and non-numerical information are located in different regions of the brain.

Working memory difficulties have also been implicated, this kind of weakness has been thought by some theorists to underline problems on the completion of calculations and the learning of arithmetic facts (Connor, 2005). However, a study of children described as dyscalculia compared with controls on memory tasks involving letter and digit span showed that the dyscalculic group performed more poorly on both types of task, while another study cited by Butterworth (2005) found that dyscalculic children did not appear to have reduced phonological working memory given their ability to manage non-word repetition tasks satisfactorily. The implication is that working memory problems may co-exist with number problem, but there is no real evidence that any form of working memory problem plays a causal role in Dyscalculia.

However, there is evidence to indicate that parietal lobes are particularly implicated in the pattern of activation in response to a numerical stimulus (Connor, 2005). According to Connor, evidence exists that among adolescents with a history of low birth weight and deemed to be at some risk of developmental problems, those individuals who display weaknesses on the numerical operations subtest of the W. O. N. D. have less grey matter in the left parietal lobes.

There also appears to be a significant genetic basis of dyscalculia in that the siblings of children with dyscalculia have a considerably enhanced probability (10 to 15 times greater) of having dyscalculic problems more than is the case among the general population (Connor, 2005). In the opinion of Connor, "it also appears that some abnormalities of the X chromosome have a greater impact upon numerical skills than upon other cognitive abilities".

2.1.3.3 Dyslexia (Reading disorder)

Learners reading disability (otherwise known as dyslexia) have been described by Harris and Hodges (1981) as retarded readers whose reading are significantly below expectation for their age and intelligence and are also disparate with their cultural linguistic and educational experience. It is sometimes differentiated into primary (co-environmental in origin) and secondary, (environmental in origin). Based on this definition, a disabled reader may be a student that is reading below his / her ability level and is underachieving (Rubin, 1991).

In the view of the British Psychological Association (2005), dyslexia is evident when accurate and fluent word reading and or spelling develops very incompletely or with great difficulty. This focuses on literacy learning at the "word level" and implies that the problem is severe and persistent despite appropriate learning opportunities. Also, the International Dyslexia Association cited in Bright Solutions for Dyslexia (1998), describes dyslexia as a neurological based, often familiar disorder which interferes with the acquisition and processing of language. Varying in degree of severity, it is manifested by difficulties in receptive and expressive language, including phonological processing, reading, writing, spelling, handwriting and sometimes in arithmetic. The International Dyslexia Association explains further that dyslexia is not the result of lack of motivation, sensory impairment, inadequate instructional or environmental opportunities or other limiting conditions, but may occur together with these conditions.

Dyslexia has been noted to be the most common learning disability in children and that it persists throughout life (Perlstein, 2008). Corroborating this, Reid and Fawcett (2005), enlist some attributes of developmental dyslexia, which may persist to a greater or lesser extent in an individual over his or her life time. These include:

- Difficulties in effectively utilising short and long-term memory.
- Difficulty in processing information at speed
- Organisational difficulties
- Phonological difficulties
- Visual difficulties in relation to reading words
- Co-ordination difficulties
- Difficulties in utilising meta-cognitive strategies

O'Brien (2009) notes three subtypes of dyslexia that have been recognised by researchers. These are orthographic or surface, phonological and mixed dyslexia.

Orthographic Dyslexia: This according to Roberts and Mather (1997) refers to "a problem with the acquisition of decoding or encoding skills that is caused by difficulty with rapid and accurate formation of word images in memory". Orthographic dyslexics have difficulty in storing mental representation of words, especially phonetically irregular words. The problems underlying this type of dyslexia are related directly to memory and coding skills that allow representation of printed letters and words and not to poor phonological processing.

Run on it is also called surface dyslexia and is defined as an inability "to recognise written words on a purely, visual basis. They have trouble reading around words that are irregularly spelt. Rather than recognising words visually, these patients apparently sound out the words on the basis of correspondences between letters and sounds" (Caplan, 1987).

Phonological Dyslexia: This means the individual's dyslexia is rooted in his / her difficulty manipulating and integrating the sounds of a language effectively (O'Brien, 2009). Strong language – sound processing skills are needed to learn to read and write successfully and a deficit in this phonological skill is the most common characteristic of individuals with dyslexia (O' Brien, 2009). The phonological dyslexic is unable to segment, analyse, and synthesise speech sounds and is identifiable by their phonetically inaccurate misspellings.

Snowling, defines phonological dyslexia as an inability to produce novel words due to poor graphemephoneme knowledge; the patient exhibits poor performance on phonological awareness tasks and deficits in verbal working memory. Phonological dyslexics are frequently unable to segment words into individual sounds most likely because of impaired representation and use of phonology (O'Brien, 2009).

Mixed Dyslexia: (Double-Deficit Dyslexia): Mixed dyslexia is recognised when individuals present with symptoms of both orthographic and phonological (O'Brien 2009).

Although, the causative factors of learning disability in general and dyslexia specifically are still elusive, several researchers have suggested neurological, general and environmental factors as the brains behind this disorder. For instance, Snowling

& Hayiou – Thomas (2006) opine that parents provide not only the home environment but also the genes that will affect the child's language and literacy skills. Recent literature on the hereditary basis of dyslexia and other specific reading difficulties suggests a high multi-factorial generic component, a strong environmental component and also significant genotype – environment interactions (based on twin studies) (Grigorenko, 2001). Researchers have isolated various genes on different chromosomes using a molecular genetic technique, known as Quantitative Trait Loci (QTL) identification. Putative chromosomes linked to families with dyslexic individuals include the chromosomes 2, 13, 14, 15 and X (Jenkins, 2005). It is interesting that the X chromosome is implicated because males are typically four times as likely as females to be dyslexic. A number of different chromosomes have been implicated in various molecular genetic studies (Grigorenko, 2001). Moreover, the base rates of reading disability in boys are generally much higher in twins i.e. twin boys were only 60% as likely as singletons to have adequate literacy standard by the age of 14 (Hay, O'Brien, Johnson & Prose, 1984). Adoption studies of dyslexics may be a next step in understanding the interactions between genetics, development and the environment in young children. It has also been argued that environmental factors, such as parents' attitude to education could be related to the literacy skills of adopted children (Petrill, Deater-Deckard, Schat, schneider & Davis, 2005).

Also, Bright solutions for Dyslexia, Inc. (1998), opines that Dyslexia results from a neurological difference; that is a brain difference. According to her, people with dyslexia have larger right-hemisphere in their brains than those of normal readers. That may be one reason people with dyslexia often have significant strengths in areas controlled by the right-side of the brain, such as artistic, athletic and mechanical gift, 3–D visualisation ability; musical talent; creative problem-solving skills and intuitive people skills.

In addition to unique brain architecture, people with dyslexia have unusual "wiring" neurons which are found in unusual places in the brain and are not heatly ordered as in non-dyslexic brains (Bright Solution for Dyslexia, Inc, 1998). Moreover F/MRI studies have shown that people with dyslexia do not use the same part of their brain when reading as other people. Regular readers consistently use the same part of their brain when they read. People with dyslexia do not use that part of their brain and there appears to be no consistent part used among dyslexic readers. (Bright Solutions for Dyslexia, Inc, 1998).

Behaviourally, dyslexic students have been noted to suffer from several socio-emotional problems which often include poor self-concept, not tolerating failure, social anxiety, avoidance of assignments poor and slow self management skills (Narimani, Ahair Homeily & Siahpoosh 2009). According to Narimani et al, these children fail to do things because of learning problems. They are confused in social circles and have negative feelings towards their own value.

2.1.4 Causes of Learning Disabilities

Although, the actual etiology / cause of learning disabilities still remains a debate among experts, "over the last decade, particularly, compelling scientific evidence from genetics research and studies of the brain has clearly demonstrated the neurobiological basis of learning disabilities" (Fiedorowicz, 1999). Some of these factors shall be considered.

2.1.4.1 Genetics of Learning Disabilities

A genetic basis for learning disabilities has been confirmed through twin studies, sibling and family pedigree analysis. Twin studies have shown that if one twin has a reading disability, the probability of the other also having a reading disability is 68% for identical twins (monozygotic) and 40% for fraternal twins (dizygotic) (Fiedorowicz, 2005). Also, familial transmission of learning disability has been investigated and has shown that if there is a family history (parents, siblings and extended family) of reading disabilities, the probability of having a reading disability is significantly increased (Fiedorowicz, 2005).

Genetic influences appear to be more prominent in children with phonological coding deficits than in those with visual coding deficits (Pennington, 1991). Deficits in specific processes have been found in phonological coding (the ability to discriminate sounds in words) and phonemic analysis (the ability to sound out words) compared to in visual-spatial deficits (Defries, Stevenson, Gillis and Wadsworth, 1991). The concordance of phonetically based learning problems was 71 percent for identical twins but only 49 percent for fraternal twins. Bruce Pennington and his colleagues (1991) found evidence of a major gene transmission in a large sample of families with reading disabilities linking a small set of gene that indirectly affects reading. Although, chromosomes 6 and 15 have been linked to reading problems, it is likely the difficulty is due to several genes that have not been fully evaluated (Smith,

Kimberling and Pennington, 1991). Genetic analysis of children with mathematics (dyscaculia) or written expression (dysgraphia) disabilities is another area that requires study.

A number of studies of brain structure and function have been carried out on subjects with learning disabilities One method to look at structural differences in the brain is through the microscope in postmortem or autopsy studies. Postmortem findings have indicated that the normal brain has asymmetries. For example, one side of the brain is not exactly the same as the other. These asymmetries are expected and considered normal (just as it is quite ordinary or typical for one foot to be longer than the other) (Fiedorowicz, 2005).

Important research efforts have focused on reading disabilities; since they represent the most common and frequently identified type of learning disabilities Studies have shown that brains of subjects with reading disabilities have no asymmetry. That is, there is an absence of ordinary asymmetry. For example, the temporal lobe (Planum temporale area) in the left hemisphere has been found to be typically larger than temporal lobe (Platinum temporale area) in the right hemisphere in subjects without learning disabilities (asymmetrical), whereas this area in the left hemisphere has been found to be the same size as in the right hemisphere in subjects with learning disabilities (Fiedorowicz, 2005).

In another study, a very complicated and detailed study was made to study the brain, dyslexia, and the metabolism of lactate in the brain. The study was designed to further emphasis that there are structural or functional differences in the brain of dyslexic and normal children. The study involved the use of an MR imaging and Proton Echo-Planar Spectroscopic Imaging (PEPSI). The study demonstrated that the students with dyslexia have more lactate production is located in different areas of the brain. The authors then conclude that dyslexic students seem to produce more lactate in other areas of the brain compared to their normal counterparts or the control group (Richards, 1999).

Neuropsychological assessments include a variety of tests of cognitive / intellectual, language, visual-perception, academic, motor, sensory and emotional/behavioural abilities and functions. A profile of strength and weaknesses is then correlated with known brain functions. The neuropsychological research has indicated significant findings as well. Deficiencies in language / verbal learning, reading, written language, verbal reasoning, verbal memory, arithmetic computation

and processing speed have been associated with left hemispheric dysfunction. Deficiencies in spatial function, nonverbal reasoning, nonverbal cues, social skills and social emotional information have been associated with right hemispheric dysfunction. Phonological processing deficits has been identified as a primary difficulty in subjects with language and reading disabilities, structural and functional abnormalities in the medical geniculate nuclei have been associated with these findings (Fiedorowicz, 2005).

Through the application of these investigative procedures, anomalies in brain structure and associated dysfunction have been implicated in subjects with LD. Some of these include: the plenum temperate, medial geniculate nuclei, perisylvian regions, frontal cortex, parietal operculum, inferior perietal lobe, temporal gyrus, curpus callosum, insular region, angular gyrus, occipital–striatal region, and the brain stem reticular activating system (Fiedorowicz, 2005).

2.1.4.2 Environmental and Learning Disabilities.

Environmental influences have also been suggested to impact the brain; culture may also change the development of neurons in a specific manner (e.g., reading left to right rather than right to left). Arabic and Hebrew readers have been found to show differences in hemispherical activation on reading tasks particularly tasks that involve orthographic processing (Eviatar 2000). In addition, preliminary studies have indicated that those readers that read right to left do not show the same right hemispheric preference for the processing of faces and emotion as those who read left to right (Eviatar 1997; Vaid and Singh 1989).

2.1.5 Anxiety and Anxiety Disorders

Anxiety belongs in theory and practice to the concepts of general, differential, clinical, counselling and educational psychology (Tuma & Master 1985, Schwarer, 1984). Although researchers have made considerable progress in the theoretical analysis of anxiety, the identification of the conditions of its development, the construction of methods to diagnose anxiety and the invention of therapeutic techniques (Krohne, 1977), they have not yet presented a clear definition of the term anxiety, perhaps because there is no consensus upon the various facets included in it (Rost & Schermer, 1989). However, anxiety has been conceptualised as a distressing emotion, consisting of both psychological and somatic manifestations and

hyperarousal (Cooray & Bakala, 2005). Also, Shechter & Zeidner (1990) cited in Zeidner (1998) see it as a probability of harmful future outcome and a response to a stressful condition.

American Psychiatric Association (2000) in DSM-IV-TR defines anxiety as "the apprehensive anticipation of future danger or misfortune accompanied by a feeling of dysphoria or somatic symptoms of tension. The focus of the anticipated danger may be external or internal".

Also, in trying to expatiate on the nature of anxiety, Sarason & Sarason (1990) listed some of the major attributes of anxiety. The anxious individual:

1. Appraises a situation as difficult, threatening, or challenging.
2. Perceives himself or herself as being inefficient or inadequate to the task at hand.
3. Focuses on undesirable consequences of personal inadequacy or on undesirable outcomes.
4. Is preoccupied with self-related thoughts that compete with cognitive task-related activity.
5. Expects failure and loss of self-esteem.

The clinical features of anxiety have cognitive, physiological, psychological and behavioural components. According to Cooray and Bakala (2005), the psychological and cognitive elements may present as fearful anticipation, irritability, concentration and memory problems, repetitive worrying thoughts, fear and, in extreme instances, fully fledged panic. Physiological manifestations include dry mouth, difficulty in swallowing, flushing, sweating, pallor, palpitations, tremor, hyperventilation, chest pain / tightness, headache, backache, fatigue, muscle tension, diarrhea, increased urinary frequency, paraesthesia, heightened startle response and insomnia. Also, Khreim and Mikkelson (1997) stress the need to place relatively greater emphasis on phenomena such as agitation, screaming, crying, withdrawal, regressive / clingy behaviour or freezing, all of which could be interpreted as manifestation of fear while diagnosing anxiety.

Suffice to note that anxiety has been clearly differentiated from fear by experts although they share common characteristics. Because anxiety and fear are among the body's first defenses against harm, they may share redundant mechanisms; in general, psychometric and physiological data suggest that they share considerable overlap (Craig, Brown & Baum 2000). Based on a review of studies that manipulated anxiety

and fear through brain lesions, electrical stimulation and pharmacological manipulations, it appears that both fear and anxiety operate through activation of the noradrenergic pathway originating in the locus coeruleus (Gray, 1982). In contrast to fear, which triggers the fight or flight response through this mechanism, anxiety appears to activate the noradrenergic system in conjunction with serotonergic pathways originating in the raphe nuclei (Gray, 1982). The result is a priming of the fight or flight response, which is simultaneously suppressed through serotonergic inhibitory pathways.

Different etiologies, response patterns, time courses and intensities of anxiety and fear make distinctions between them justifiable (Craig et al, 2000). Although both anxiety and fear are alerting signals, they appear to prepare the body for different actions. Anxiety implies that danger may be near and that the fight or flight response may be necessary – hence the priming effect described by Gray (1982). Anxiety is a generalised response to an unknown threat or internal conflict whereas, fear is focused on known or unknown external danger. Anxiety is usually long-lived (there is no obvious stimulus to escape or avoid), but fear is usually event-limited. Where fear represents response to finite potential harm that can be avoided if something is done, anxiety is characterised by less well-defined threats that are not readily addressed. Fear also differs from anxiety in that it is usually unanticipated, is dependent upon the termination of the feared object, is often very intense and occurs in self-limiting single episodes (Craig et al, 2000). In anxiety, the fear-producing stimulus is either not present or not immediately threatening, but in anticipation of danger, the same arousal, vigilance, physiologic preparedness and cognitive affects and cognition occur.

Anxiety is seen as a universal human experience and that at optimal levels it is normal and useful for motivation and protection, helpful in coping with adversity (Yerkes & Dodson 1906, cited in Cooray & Bakala, 2005). The ability to anticipate and prepare is associated with the ability to experience fear and anxiety as we continually strive to adapt to a changing world. However when anxiety becomes abnormally intense and / or prolonged, it ceases to play a role in this continual adaptation (Craig, Brown & Baum, 2000). At this point anxiety has turned to be pathological.

In the view of Craig et al (2000), pathological anxiety (anxiety disorders) occurs when normal daily function is disrupted by inappropriate responses to internal

conflicts or anticipation of some unknown threat. According to Craig et al, these exaggerated responses can be qualified in terms of duration or intensity. Cooray and Bakala (2005) corroborate this by saying that anxiety disorders or pathological anxiety occurs when the intensity or duration of anxiety is disproportionate to the potential for harm, or in the absence of recognisable threat to the individual. Anxiety disorders involve increased level of arousal, which has the effect of disorganising rather than facilitating an individual's performance. Characteristics of pathological anxiety (anxiety disorder) can include repressed thoughts, negative conditioned responses, counterproductive thought patterns, poor coping strategies, and increased sympathetic tone of the autonomic system (Kaplan & Sadock, 1991).

Anxiety ranks among the most common categories of mental disorder reported in large-scale epidemiological studies within the general population (Robins & Regier, 1991). In primary care, anxiety and depression account for 80% of consultations for mental health problems (Cooper, 1972). Untreated, they are costly to both the individual and society. Comobidity is also a significant problem: about 75% of individuals with anxiety disorder meet criteria for at least one co morbid psychiatric disorder (Kessler, McGonagle, Zhao, Nelson, Hughes, Eshleman, Wittchen, & Kendler; 1994).

2.1.6 Etiology of Anxiety Disorders

The etiology of most anxiety disorders, although not fully understood, has come into sharper form in the last decade. In broad terms, the likelihood of developing anxiety involves a combination of life experience, psychological traits and or genetic factors. The anxiety disorders are so heterogeneous that the relative roles of these factors are likely to differ. Some of these shall be discussed.

2.1.6.1 Anxiety Disorders: The Psychological Basis

The psychological basis underpinning anxiety includes psychodynamics (anxiety perceived as an expression of unresolved conflict), cognitive (role of individual perceptions of stressful events in etiology of anxiety) and behavioural (role of learning, e.g. through classical conditioning and vicarious or observational learning theories), (Cooray and Bakala, 2005).

Psychodynamic theories have focused on symptoms as an expression of underlying conflicts (Rush, Stewart, Garven & Waller, 1998; & Thorn, Chosak, Baker

& Barlow, 1999). Although there are no empirical studies to support these psychodynamic theories, they are amenable to scientific study (Kandel, 1999) and some therapists, find them useful. For instance, ritualistic compulsive behaviour can be viewed as a result of a specific defense mechanism that serves to channel psychic energy away from conflicted or forbidden impulses. Phobic behaviours similarly have been viewed as a result of the defense mechanism of displacement. From the psychodynamic perspective, anxiety usually reflects more basic, unresolved conflict in an intimate relationship or expression of anger.

More recent behavioural theories have emphasised the importance of two types of learning: Classical conditioning and vicarious or observational learning. These theories have some empirical evidence to support them. In classical conditioning, a neutral stimulus acquires the ability to elicit a fear response after repeated pairings with a frightening (unconditioned) stimulus. In vicarious learning, fearful behaviour is acquired by observing others' reactions to fear – inducing stimulus (Thorn et.al., 1999). With general anxiety disorder, unpredictable positive and negative reinforcement is seen as leading to anxiety, especially because the person is unsure if avoidance behaviours are effective.

Cognitive factors, especially the way people interpret or think about stressful events also play a critical role in the etiology of anxiety (Barlow & Lehman, 1996, Thorn et al., 1999). A decisive factor is the individual's perception, which can intensify or dampen the response. One of the most salient negative cognitions in anxiety is the sense of uncontrollability. It is typified by a state of helplessness due to a perceived inability to predict, control or obtain desired results (Barlow et al 1996). Negative cognitions are frequently found in individuals with anxiety (Ingram, Miranda & Segal, 1998).

2.1.6.2 Anxiety Disorders: Biological Factors

Evidence for biological factors that predispose children to anxiety disorders is based largely on findings from family aggregation, twin, behavioural genetic and inhibition studies. Family aggregation studies suggest that children whose parents have anxiety disorder are at the risk of developing it. (Biederman, Faraone, Hirshfeld-Becker, Friedman, Robin and Rosenbaum, 2001) Similarly, parents whose children have anxiety disorder are likely to show anxiety disorders or symptoms. Research on family aggregation also suggests that when parents have anxiety disorder, mothers are

more often associated with familial transmission of anxiety than fathers. Also, children of anxious parents are likely to have an earlier onset for anxiety disorders than their parents.

Twin studies also suggest a familial transmission. For example, concordance rates for different monozygotic (identical) and dizygotic (fratanal) twin pairs suggest a strong genetic basis for anxiety neurosis. Eley's (1999) review of behavioural genetic research concludes that factors in shared and non-shared environments of parents with anxiety disorder have important influence on the development and maintenance of most anxiety disorders in their children and adolescents.

Recent research on behavioural inhibition and anxiety has provided important neurobiological insights regarding correlates in the etiology of anxiety disorders (Salle & Greenawald, 1995). Behavioural inhibition refers to the temperamental style of approximately 10 to 15% of Euro-American infants who are predisposed to being irritable, shy and fearful as toddlers and cautious, quiet and introverted as school-aged children (e.g. Kagan, 1989).

2.1.6.3 Anxiety Disorders: Family Environment and Parenting Factor

Parenting styles of anxious children have been described as overprotecting, ambivalent, rejecting and hostile (See Ginsburg, Silverman & Kurtines, 1995). Retrospective reports of adults with anxiety disorders show that adults view their parents as overcontrolling and less affectionate. Studies of families of school refusing/ anxious children indicate that these families score lower in indices of child independence and participation in recreational activities, and higher in indices of hostility/conflict than families of non-school – refusing/ anxious children (Kearney & Silverman, 1995). These families also have been found to be more overprotective and disturbed in role performance, communication, affective expression, and control relative to families of children with non anxiety psychiatric disorders (e-g, Bernstein& Garfinke1986).

In a review of the parenting and child-rearing practices research literature, Rapee (1997) concludes that rejection and excessive parental control were related to the development and maintenance of anxiety disorder in children. An observational study conducted by Barrett, Dadds & Rapee (1996) posts that children and parents with anxiety disorder generated more avoidant solution in problem solving situation relative to aggressive and nonclinical control. These parents also modelled caution,

provided information about risks, expressed doubts about child competency and rewarded avoidant behaviour. Moreover, having an anxious family member (e-g. parent) also has been shown to increate risk for distress and dysfunction in family relationships (Bruch & Heimberg, 1994). Given the consistency of findings showing the role of the family environment and parenting factors, the implication is that, intervention could be aimed at incorporating these factors in treating children with anxiety disorders.

2.1.7 Anxiety Disorders in People with Learning Disabilities

Anxiety disorders in people with learning disabilities are well recognised (Bailey & Andrews, 2003), may be underreported (Reiss, Levitan & Szysko, 1982) and under -diagnosed (Veerhoven & Tuinier, 1997). The prevalence rate of anxiety disorders varies significantly for the different subtypes, so that some are less common in people with learning disablities and others are more common or as common as those in general population (Reiss, 1993). It is reported that sometimes anxiety can be out of proportion to the cause or may be specific to something in particular (phobia). Other developmental disorders, especially autism, may also make people with LD more susceptible to anxiety (Foundation for People with Learning Disabilities FPLD, 2002).

Individuals with LD are prone to anxiety disorders much more than normal population (Bradley, Summers, Wood & Bryson, 2004). This may be attributed to factors such as, lifetime of adversity, inadequate social support and poor coping skills (Cooray and Bakala, 2005). In addition, an inadequate social and cognitive resource to cope with adulthood is thought to contribute to this vulnerability to social and emotional problems (Wilson, 2004). These factors contribute to increased vulnerability to stressful life events which may trigger anxiety disorders. Smiley (2005) suggests that overprotection and poor linguistic skills, leading to greater difficulties in discussing or dismissing fears and resulting in over-generalisation, are responsible for anxiety disorders.

Current psychological models of anxiety tend to incorporate the role of the individual's vulnerability, which includes both genetic (Smoller & Tsuang, 1998), and acquired dispositions (Coplan, Pine & Papp, 1997). Some genetic causes of learning disability are associated with anxiety, for example; fragile – x syndrome is associated with social anxiety disorder; Rubinstein – Taybi and Prader–Willi syndromes with

Obsessive–Compulsive disorder (Levitas & Reid, 1998); and Williams Syndrome with anxiety (Einfeld, Tonge & Reiss, 2001) and phobias (Dykens, 2003). Hyman, Oliver and Hall (2002) note significantly high compulsive behaviour in Cornelia de Lange Syndrome. When people experience anxiety, it affects the person's mood and thinking, creates a range of physical symptoms in their body and often causes the person to alter what they do (Williamson, 2003).

Studies on types of fear reported in people with LD demonstrate similarities between children and adults of equivalent mental age, highlighting the developmental perspective (Sternlicht, 1979; Duff 1981; Pickersgill, Valentine & May, 1994). For example, individuals with moderate learning disability experience fear of animals, thunder and ghosts (preoperational thinking), and physical injuries (concrete operational), mirroring normal piagetian transition in non-learning disable children. However, in childhood, anxieties and phobias might also occur as transient phenomena, integral to normal early development (Cooray & Bakala, 2005).

Accurate diagnosis is central to the effective management of anxiety disorders among people with learning disabilities (Cooray & Bakala, 2005). However, Sovner (1986) highlights four factors reflecting the profound bio-psychosocial effects of LD that may influence the diagnostic process (and the eventual treatment):

- **Intellectual distortion:** emotional symptoms may be difficult to elicit because of deficits in abstract thinking and in receptive and expressive language skills; for example, the phrase "butterflies in the stomach" might not be understood;
- **Psychosocial masking:** Limited social experiences can influence the content of psychiatric symptoms; for example mania may present as grandiose belief that the individual can drive a car;
- **Cognitive disintegration:** a decreased ability to tolerate stress can lead to anxiety – induced decompensation (sometimes misinterpreted as psychosis);
- **Beseline exaggeration:** the severity or frequency of chronic maladaptive behaviour may increase after onset of psychiatric illness.

2.1.8 Test Anxiety

Test anxiety is one of the most debilitating factors of schools and other settings where testing is performed (Birenbaum & Nasser, 1994). Indeed, among high school and college students, it is a common and potentially serious problem. Debilitating test anxiety affects 10% to 30% of all students with a disproportionately higher prevalence among students with LD and minority students (Peleg, 2009).

Based on the available literature, many definitions of test anxiety exist (Liebert & Moris, 1967, Nicaise, 1995). This might have propelled Williams (2000) to perceive anxiety as a vague concept having many different meanings and measures and operational definitions. In the opinion of Sieber, O'Neil & Tobias (1977), the term test anxiety refers to the set of phenomenological, physiological and behavioural responses that accompany concern about possible negative consequences of failure in an examination or similar evaluative situation. Sieber (1980) simply defines the construct as the reaction to stimuli that are associated with an individual's experience of evaluating situation. In the words of Spielberger and Sarason (1989), test anxiety could be defined as a situation – specific trait that refers to anxiety states and worry conditions that are experienced during examinations. Moreover, Rost & Schermer (1989) stress that the term, test anxiety, indicates the anxiety-evoking situation and, or the causes of anxiety relating to the training, learning and performance in their wide sense.

Nicaise (1995) equally defines test anxiety as an individual's physiological, cognitive and behavioural responses that stimulate negative feelings about an evaluation. According to Nicaise, when an individual becomes anxious, the physiological system becomes aroused, such as the heart beating faster or the sweat glands producing more perspiration. At the same time, the individual may experience apprehension and a higher sense of inadequacy. When an individual experiences test anxiety, these physical and cognitive responses may lead to negative feelings and cognitions about testing situation (Nicaise, 1995). In the opinion of Suinn (1968), test anxiety is the inability to think or remember a feeling of tension and difficulty in reading and comprehending simple sentences or directions on an examination. Spielberger and Vagg (1995) view test anxiety as a situation – specific form of trait anxiety. According to them, a test – anxious individual is more prone to react with excessive anxiety (e-g, worry, negative thoughts, tension and physiological arousal) across evaluative situations (i.e. trait anxiety), and the test-anxious individual

experiences more intense levels of state anxiety in each evaluative situation. State anxiety is viewed as the emotionality component (i.e. the physiological symptoms) of test anxiety. The high level of state anxiety experienced by one's memory and these worry conditions interfere with the test-anxious individual's performance in a test (Zeidner, 1998).

The nature of test anxiety has been characterised as multifaceted and inclusive of task-irrelevant cognitions, heightened physiological arousal, and inefficient study behaviour (Spielberger, Anton & Bedell, 1976, cited in Abdul-Kareem, 2004). High-test anxious students tend to view evaluative situations, in general, and test situation, in particular, as personally threatening (Sarason 1986, Sarason & Sarason, 1990). They most likely have negative self images, hold low positions in their peer group and are often socially isolated. They are frequently regarded by parents and teachers as nonconformists and are often under stimulated in their cognitive performance (Abdul-Kareem, 2004). They frequently have a bad attitude towards work and take less care of their tasks. They show a high degree of helplessness, lack of self-confidence, low self-esteem and are less satisfied with themselves (Abdul-Kareem, 2004). Their performance is low in almost all school subjects, and lower on tests of school achievements, intelligence and creativity as compared to their low test-anxious counterparts. They attribute their academic success to external factors (e.g. to chance) and their failure to internal factors (e.g. to lack of talents). They are frequently absent, frequently ill and suffer more failure (Rost & Schermer, 2001).

2.1.9 Dimensionality of Test Anxiety

Researchers have stated that test anxiety construct is complex, consisting of multiple dimensions (Benson 1998; Zeidner 1998). Dimensions proposed to be part of the current conceptualisation of the test anxiety construct, based on nearly a century of research on test anxiety include emotionality, worry, cognitive interference and lack of self-confidence (Hodapp, 1995) or possibly, lack of self-efficacy (Hodapp & Benson, 1997) or social derogation (Friedman & Bendas – Jacob, 1997). In recent years, a four-dimensional model of Test Anxiety has been proposed by Sarason (1984) and operationalised via his 40 – item Reactions to Test questionnaire (RTT). The four components are tension (feeling nervous before and during a test), bodily symptoms (experiencing headaches and other unpleasant symptoms before and during

a test), worry (thoughts of doing poorly in the test), and test – irrelevant thoughts (inability to stay focused on test).

On the other hand, test anxiety has been overwhelmingly identified as a two-factor construct, consisting of the cognitive (often referred to as **"worry"**) and emotional (or affective) components (Morris, Davis & Hutchings, 1981; Schwarzer, 1986). Cognitive test anxiety refers to the inability to retrieve information in an evaluating setting. It is characterised by such conditions as task irrelevant thoughts, excessive fear of failure, worry about letting others down and negative comparisons with others. Emotional test anxiety on the other hand, refers to physiological reactions to evaluative situations. It includes reactions such as dizziness, nausea and feelings of panic. Meta-analyses and path analyses have concluded that cognitive test anxiety is the more important dimension of test anxiety for explaining differences in academic achievement. It is more strongly and more consistently associated with test performance (Bandalos, Yates and Thorndike-Christ 1995, Williams, 1991), while the emotionality component is related but does not directly influence test performance (Sarason, 1986; Williams, 1991). The apparent relationship between emotionality and test performance is such that emotionality impacts test performance only under situations where the individual also maintains a high level of cognitive test anxiety (Deffenbacher, 1980, Hodapp, Glanzmann & Laux, 1995). Although emotionality has traditionally not been viewed as central to performance, recent work has demonstrated that emotionality may be the triggering machination for self-regulation strategies that facilitate performance (Schutz & Davis, 2000).

Standard conceptualisations of the cognitive test anxiety construct have addressed the interplay between state and trait anxiety (Snow, Corno & Jackson, 1996; Spielberger & Vagg, 1992 cited in Cassady, 2001). In this conceptualisation, individuals with high levels of cognitive test anxiety generally hold heightened levels of trait anxiety but in evaluative situations, their state anxiety also elevates (Zeidner, 1995). This combinatory relationship can lead to feelings of anxiety that interfere with test performance through blocks to cue utilisation, attenuated attentional resources or mere cognitive interference from the worries and fears induced by anxiety (Geen, 1980, Hembree 1998; Sarason 1986). The relationship has also been characterised as an addictive function of the dispositional and situational anxiety influences faced by students in evaluative scenarios (Zohar, 1998).

Apart from the debilitating test anxiety dimensions being proposed by experts, there is also a proposed facilitating test anxiety dimension. In a classic study by Yerkes and Dodson (1908), and later by Alpert and Haber (1960), these researchers showed that some test anxiety actually enhances or facilitates test performance. These proposed dimensions supported by research highlight the importance of developing new measures based on a broader conceptualisation of the test anxiety construct to assess test anxiety in elementary and secondary school students (Lowe, Lee & DeRuyck, 2004). The idea that test anxiety facilitates academic performance might have propelled Morakinyo (2005) to state that some dosage of anxiety is necessary for healthy personality because it helps react against danger or what is perceived as dangerous.

2.1.10 Trait Test Anxiety

Trait test anxiety refers to a relatively stable individual difference in anxiety proneness, that is, the general tendency to perceive stressful test situation as dangerous or threatening, and to respond to such situations with varying levels in the intensity of anxiety reactions (Spielberger, 1966). It is characterised as the ability to perceive or interpret a testing situation to which the student responds with more or less intensity of state test anxiety (Spielberger, 1972; Spielberger & Vagg !995). High trait-anxious students tend to see test situations as more threatening than students who are low in evaluative trait anxiety. They are more susceptible to stress in test situations and tend to experience anxiety state reactions of greater intensity and with greater frequency over time than low trait-anxious students (Zeidner, 1998). For instance, students who score high on trait anxiety are likely to interpret the exam situation as being more threatening compared to students who scored low.

2.1.11 State Test Anxiety

Spielberger (1979), opines that anxiety state could be defined in terms of the subjective feelings of tension, apprehension, nervousness and worry that are experienced by an individual at a particular moment and by heightened activity of the autonomic nervous system that accompanies these feelings. This condition is characterised by conscious feelings of tension and perceived arousal, accompanied by physiological reactions (e.g. palpitation, sweat, muscle tension), and accompanied by

negative self-statements and thoughts related to failure or poor achievement (Spielbeger & Vagg, 1995).

In a testing situation, state anxiety is conceptualised as a situation- specific form of test anxiety that encompasses both worry and emotionality. It is characterised as an emotional state that a student may experience during an evaluative situation (e.g. the anxious effect provoked by an exam; Hong & Karttensson, 2002). A student may consciously experience nervousness, tension, worry, disorganisation, apprehension, and fear or even feel a sense of danger in response to physiological arousal from autonomic nervous system (Lawson, 2006). The emotional states are often accompanied by ruminating thoughts of failure and hopelessness. State anxiety often fluctuates depending on the extent of the student's perceived threat created by factors such as how well prepared the student was for the exam, type of test questions, difficulty level of the test question and individual differences in personality characteristics (Spielberger,1972; Spielbeger & Vagg, 1995; Zeidner, 1998).

2.1.12 Manifestations of Test Anxiety

There are several ways through which test anxiety manifests itself. As identified by researchers, the manifestations include cognitive, physiological, emotional and behavioural demonstrations.

2.1.12.1 Cognitive Manifestation

Worry is traditionally viewed as a primary component of the anxiety state (Sarason, 1988). Liebert and Morris (1967) define worry as the cognitive elements of the anxiety experience, such as negative expectations and cognitive concerns about oneself, the situation at hand, and potential consequences. Worry component is triggered by cues related to negative appraisals of examination performance, perceived as threatening the individual's sense of adequacy and worth (Morris, Harris and Rovias, 1981 et al.). Worrisome thoughts reach a high level early in the exam process and do not dissipate so rapidly (Liebert & Moris, 1967). It has been found that worry is significantly negatively related to both performance expectancy (Liebert & Morris, 1967) and examination performance (Deffenbacher, 1977). Worrisome thoughts may interfere with performance by distracting attention while preparing for and taking the examination (Morris et al., 1981). In this context, it should be pointed out that task-irrelevant thoughts can be related to the test performance and can be

unrelated. Spielberger and Vagg (1995) argue that it would be more meaningful to regard the latter as a correlate and not as component of test anxiety.

Research indicates that the cognitive elements of test anxiety may be manifested as worry, misunderstanding the task, not noting the mistakes, thought blocking, forgetfulness, poor listening and concentration, clinging to the same thoughts, task irrelevant thoughts, unclear thoughts, not understanding the questions, reduced performance expectations (Deffenbacher, 1980).

2.1.12.2 Physiological Manifestation

Autonomic arousal is the most dominant response for the expression of anxiety in

stressful situations. Autonomic arousal may manifest during testing in a variety of physiological responses, such as rapid heartbeat, feelings of nausea, sweating, cold and clammy hands, need to pass urine, shaking and trembling (Suinn, 1984). Galassi, Frierson and Sharer (1981) find that the most frequently reported bodily sensation experienced by university students, in descending order, were hands or body perspiring, heart beating fast, stomach tense, dryness in mouth and hands or body trembling. Studies by Holroyd, Westbrook, Wolf, and Badhorn (1978), and Hollandsworth, Glazeski, Kirkland, Jones and Van Norman (1979) state that high- compared to low-test-anxious students did not differ in physiological arousal levels both prior to and during a test, but differed in the appraisal and interpretations made about their arousal (e.g., test-anxious students defined their arousal as debilitative, whereas low-test anxious students viewed their arousal as a cue to exert greater effort toward the test).

2.1.12.3 Emotional Manifestation

Emotionality is defined as one's perception of the physiological-affective elements of anxiety experience. This implies awareness of indications of autonomic arousal and unpleasant feeling such as nervousness and tension (Morris et al., 1981). Emotionality rises sharply immediately before the test and typically wanes as the examinee progresses on the examination (Doctor & Altman, 1969). It has been found that emotionality is elicited primarily by external cues (e.g. walking into the exam hall, appearance of examiner, distribution of test booklets), which indicate the initiation of evaluation (Morris et al., 1981). The emotional elements of anxiety can

be expressed as feelings of restriction, loneliness, sadness, disappointment or helplessness (Rost & Schermer, 1989).

2.1.12.4 Behavioural Manifestation

High test-anxious students show significantly low levels of study skill competence when compared to low test-anxious students (Wittmaier, 1972). They are characterised by poor study skills, including utilising class time, taking and organizing class notes, preparing for exams and maximising their use of time in objective exams (Culler & Holahan, 1980; Kirkland & Hollandsworth, 1979). They attempt to make up for their lack of study skills by increasing the amount of total study time (Culler & Holahan, 1980; Benjamin, Mckeachie, Lin & Holinger, 1981). They report significantly more problems in encoding, organising and retrieval of the information (Benjamin, Mckeachie and Lin, Holinger, 1981 et al.). Also, anxiety may be expressed in a variety of avoidance behaviours at various stages of the examination process. Academic procrastination is an outstanding form of avoidance behaviour characterising test-anxious students (Solomon & Rothblum, 1984).

2.1.13 Determinants of Test Anxiety

If a student appreciates the situational demands of the testing process as dangerous and exceeding his / her competence, the transaction between the student and the test situation will be judged as anxiety-producing (Zeidner, 1998). It is expected that any aspect of the testing process (e.g. test difficulty) increases the probability of failure which will also increase the student's appraisal of perceived threat in the test environment, thus increasing his / her anxiety (Lazarus & Folkman, 1984, cited in Zeidner, 1998). This transaction shows there are situational and subjective determinants of test anxiety.

2.1.13.1 Situational Determinants

Students high in test anxiety usually perform as well as those low in test anxiety if the situation is not evaluative or stressful (Wine, 1971). This means only in evaluative situations, there is a difference in performance between high and low test-anxious individuals.

The difficulty of the task (i.e., test) is regarded to be a major source of stress and anxiety. O'Neil, Spielberger, and Hansen (1969) posit that blood pressure increased while students worked on difficult learning materials and decreased when they responded to easy materials. The difficulty may not only be due to the task, but also to other factors such as the ability of the student, amount of preparation and prior experience with the task in which a student will be engaged (Zeidner, 1998).

Item order may also affect test anxiety. It has been found that when a test is initially perceived as difficult, the presence of anxiety will be most disruptive and then the performance will be poor. Covington and Omelich (1987) report that students who combine high anxiety and lack of self-confidence performed poorly in difficult test items, especially when hard items were placed first, compared to their counterparts who combine low anxiety and high confidence.

Regarding test instructions, Williams (1976), cited in Abdul-Kareem (2004) reports that task instructions de-emphasising the evaluative nature of the task improved the performance of anxious students, while instructions stressed that the task is a test of ability hindered their performance. Further, test formats may affect high-test anxious students. A study by Green (1981) examines whether preferences for different test formats (e.g., multiple-choice, problem-solving, essay, interpretive exercise, completion, and true-false), differed from students high and low in anxiety. It was found that groups high and low in anxiety agreed on all preference ranks except essay and interpretive exercise; the highly anxious group preferred interpretive exercises to essays. Another study by Zeidner (1987) shows that school children viewed multiple-choice tests as being less anxiety-producing than essay tests.

On the other hand, time pressure is an anxiety-evoking factor. Students may note that the exam time is insufficient for them to answer all the questions. This situation may lead to thoughts about the consequences of poor achievement or failure, which may make them feel anxious. Plass and Hill (1986) find that high-anxious boys performed poorly under time pressure compared to their less anxious peers, whereas when time pressure was removed, their performance improved significantly.

2.1.13.2 Subjective Determinants

Irrational beliefs and negative perceptions relating to the test situation are considered to be sources of anxiety. When a student interprets the test situation as threatening or challenging, he / she may feel uncomfortable and tense. Accordingly, even if a student has adequately prepared for an examination, his / her anxiety may result from negative thinking or worries such as focusing on how friends and other classmates are doing, or on the negative consequences of failure. A number of studies showed that anxious students emit more negative self-statements and thoughts than non-anxious students. Hunsley (1987) submits that high levels of test anxiety were associated with frequent negative cognitions during exams. Similarly, Galassi et al., (1981) reported that low test-anxious students experienced more positive and fewer negative thoughts than high-test anxious students. Zatz and Chassin (1983) posit that high test-anxious subjects reported more task-debilitating thoughts than either moderate-or low-anxious subjects. Additionally, high-test anxious subjects reported fewer positive evaluations than low test-anxious subjects.

Another determinant of test anxiety is study skills and test taking deficits. Students with poor study skills and inefficient methods of preparation frequently lack self-confidence and are anxious and tense before and during tests. Desiderato and Koskinen (1969), Mitchell and Ng (1972), Wittmaier (1972) and Onwuegbuzie and Daley (1996) report that high-test anxious students had less effective study skills than low-test anxious students. This implies that test anxiety may stem from the lack of knowledge of the examination material (Onwuegbuzie & Daley, 1996). A student perceives his / her ability to cope with a test as unsatisfactory and is uncertain about the consequences of inadequate coping (Sarason & Sarason, 1990). Thus, he / she experiences test anxiety because he / she does not feel sufficiently prepared as a result of having too few or even no study skills and habits (Culler and Holahan 1980). In addition, low level of intelligence may contribute to the initiation of test anxiety. A meta-analytic study of 61 different studies based on 8438 subjects in grades 3-postsecondary showed consistent correlation of - .23 between IQ and test anxiety (Hembree, 1988). This indicates that high-test anxiety associates with low intelligence.

Generally, anxiety-producing self-statements may result from irrational beliefs (e.g., if I don't get a full score, I will be worthless), the perception of test situation as threatening (e.g., the exam will be difficult for me, I don't know whether I'll do well or not), and / or poor study habits and skills (e.g., I feel I'm not well prepared for the examination, I may fail) (Abdul-Kareem, 2004).

2.1.14 Models of Test Anxiety

Models have been developed for explaining the relationship between test anxiety and performance. However, in this study two popular models shall be discussed. They are: the interference and the skills-deficit model.

2.1.14.1 Interference Model

The interference model argues that high level of test anxiety inhibits the ability to recall learned information (Sarason 1986; Wine, 1980). The problem is not learning, but interference with retrieval. Wine (1980), writes that high test anxiety divides the students' cognitive power between focusing on the task and attention to task-irrelevant thoughts. This both inhibits the power to recall and limits the ability to engage in higher order thinking. These factors may explain why students with test anxiety generally do better in multiple choice than essay examinations where the former may require less recall (Abdul- Kareem, 2004).

Cognitive interference can take many forms including: (a) sudden inexplicable loss of previously mastered information at the time of testing (Covington & Omelich, 1987); (b) interfering self- depreciating ruminations (Sarason, !986); (c) distracting thoughts of failure brought on by the feeling of threat to self imposed by the test (Cassady, 2004; Schwarzer & Jerusalem, 1992) or (d) physiological reactions that impair stable cognitive action (e.g. headache, perspiration, heart palpitation; Sarason, 1986). These distracters during the test event naturally reduce the ability of the learners to effectively locate and use relevant information stored in long time memory (Cassady & Gridley, 2005).

Sometimes students find it difficult to remember the answers of some questions during an examination, but when they leave the examination room, they can easily retrieve the information related to these questions. From the interference model point of view, the effect of test anxiety on performance occurs in the testing situation.

That is, anxiety during tests interferes with the student's ability to retrieve and use information that is known. (Culler & Holahan, 1980). Accordingly, anxiety hinders the individual from utilizing or developing task-relevant knowledge or skills (Hodapp & Henneberger, 1983). The root of the interference model goes back to the beginning of the empirical test anxiety research. Mandler and Sarason (1952) put forward the central hypotheses of the interference theory, which was later presented by Wine (1971, 1980) in the framework of attentional theory.

Mandler and Sarason (1952) present an interpretation of the difference in performance based on the learned psychological drives. They assumed that in test situations, two kinds of learned drives are typically effective: task and anxiety drives. The task drives stimulate behaviours to complete the task. These behaviours are activated in a given situation through setting of tasks and the expectations of individuals. The anxiety drives include all anxiety reactions, which have so far been learned in similar test situations. These drives primarily produce such reactions, so that they lead to anxiety reduction. In this regard, Mandler and Sarason proposed that these drives stimulate two opposite and incompatible behaviours: (a) Task-relevant reactions that directly contribute to task completion, thus reducing the anxiety. (b) Task-irrelevant reactions, which are not specifically linked with the requirements of the task. They can manifest as feelings of incompetence, helplessness, somatic reactions, anticipation of punishment or loss of self-worth as well as implicit attempts to avoid the test situations. It is a matter of self-centred reactions, which impair task performance.

Wine (1971) suggests that the debilitating effects of test anxiety on performance might have an attentional explanation. To put it more clearly, a high-test anxious student attends to both self and task-relevant variables in contrast to the low test-anxious student who attends mostly to task-relevant variables. Thus, according to the cognitive attentional model of test anxiety proposed by Wine, task performance is impaired by worry, negative self-statements and task-irrelevant thoughts. This model may propose cognitive-attentional training to help anxious individuals focus their attention on the work at hand (Abdul-Kareem, 2004).

2.1.14.2 Skills-Deficit Model

The skill deficit hypothesis assumes that the low test scores obtained by test anxious students are attributable to inadequate study habits or to deficient test taking skills rather than to interference by anxiety (Tobia, 1990). The model claims that high test anxious students have difficulty in learning and organising material and that this results in poor performance (Tobia, 1985; Birenbaum & Pinku, 1997). The model assumes that students have not developed the necessary strategies to encode, organise and store the materials at hand (Naveh-Benjamin, Mckeachie & Lin, 1987).

Basically, researchers who support skill-deficit model have invoked two types of deficits to account for the reduced performance by high test anxious students: Study skills and test taking skill. It is assumed that students' reduced test performance is due to less thorough initial acquisition of the content because of the study skill (Tobia, 1990). Desiderato and Kokinen, 1969; Wittmaier, 1972; and Culler and Holahan, 1980 assume that poor performance in exams is mainly attributed to inefficient preparation caused by poor study-related behaviour.

Students characterised by poor study skills and habits are well aware of their poor preparation for examinations and thus adapt low self-expectations for success. This increases anxiety relating to the examination which, in turn, impairs performance. Consequently, when students feel or perceive their study skills are insufficient, they may become anxious and then perform poorly. High-test anxious students have less study skills than low-test anxious students. As a result, they are less prepared for exams. According to this model, study skills counselling and training would be proposed to help test anxious students with poor study skills to be self-confident in test situations (Abdul-Kareem, 2004). On the other hand, the test taking deficit formulation assumes that reduced performance is caused by deficiencies in students' test taking skills (Tobia, 1990)

The two models sometimes act in an integrated manner to affect the student's performance. Therefore, instead of constituting alternative explanations, the interference and skill deficit models may be complementary (Birenbaum & Pinku, 1997; Tobia 1985). They suggest different types of students with different predicted performance levels. Students with good study skill and good ability to organise information, along with low test anxiety should perform well since they have studied the test material and possess the ability to recall. Other students are able to study the material but suffer from retrieval problem in evaluative settings and when they have

difficulty organizing the material, they do poorly regardless of the test situation or format.

2.1.15 Effects of Test Anxiety

Several authors have suggested different consequences of test anxiety on the affected individuals. For instance, Gierl & Rogers (1996) suggest that students with high level of test anxiety feel tense and worried in evaluative situations. They do not perform up to their potentials when they take tests (Hancock, 2001, Hembree, 1988). Generally, test anxiety is expected to have negative effect on performance (Smith, 1964). This is corroborated by Hembree (1988) that high test anxiety is more closely associated with low performance in low-ability students than in their high-ability counterparts. Hancock (2001) also concludes that students with high test anxiety show significantly less motivation in the classroom, and are perceived as highly evaluative compared to students with low test anxiety.

Test anxious students are reported to have low standardised achievement scores (Everson, Millsap & Rodriguez, 1991), and they experience more difficulty with learning new materials in the classroom (chapell et al, 2005; cited in Sena, Lowe & Lee, 2007). Poor motivation, negative self-evaluation, and concentration difficulties have been found among test anxious students (Swanson & Howell, 1996). Students with high levels of test anxiety have a high rate of grade retention (Hembree, 1988), school dropout (Tobias, 1979), and generalised anxiety (King, Mietz, Tinney & Ollendick, 1995). Swanson & Howell, (2006) warn that if left untreated, many of these negative effects of test anxiety are reported to increase in severity over time. In the view of Lindsay (2000), high test anxious individuals have an increased likelihood to perform poorly if a task is to be evaluated. Also, studies by Maehr and Midgley (1991) and Pintrich and Schrauben (1992) discover that the impact of test anxiety on students' performance is often influenced by the evaluation practices of the class teacher. In stressful conditions, as opposed to game-like conditions, high-test-anxious children functioned poorly when expected to achieve, but low-anxious children perform well in this environment (Hembree, 1988).

2.1.16 Dialectical Behavioural Therapy

Dialectical Behavioural Therapy (DBT) is a comprehensive cognitive – behavioural treatment for complex difficult to treat mental disorders. It was developed in late 1970s by Mrsha Linehan and colleagues to treat chronically suicidal individuals, especially Borderline Personality Disorders (BPD). However, since it is not unusual for individuals diagnosed with BPD to also struggle with other problems like depression, dipolar disorder, and post-traumatic stress disorder (PTSD), anxiety, eating disorders, or alcohol and drug problems, Dialectical Behavioural Therapy has been adapted for other seemingly intractable behavioural disorders involving emotional deregulation; including substance dependence and binge eating. Other areas where Dialectical Behavioural Therapy has been suggested useful are the treatment of depression, bipolar disorder, anxiety and panic disorders, social phobias, trauma, PTSD among others. (see Katz, Gunasekara, & Miller, 2002; Koons, Robins, Tweed, Lynch, Gonzalez and Morse, 2001 et al.; Linehan et al, 1999; Telch, Agras & Linehan, 2000).

Dialectical Behavioural Therapy was defined by Swenson, Torrey & Koerner (2002) as a cognitive – behavioural therapy for the treatment of borderline personality disorder in which an ongoing focus on behavioural change is balanced with acceptance, compassion and validation of the consumer. Dialectical Behaviour Therapy integrates proven techniques from cognitive and behavioural therapies within a philosophical and theoretical framework for understanding borderline pathology. Its theory and practice borrow from four different orientations: biological, social, cognitive – behavioural and spiritual (Linehan 1993).

"Dialectics" is a complex concept that has its roots in philosophy and science. It refers to a form of argument in which an assertion is first made about a particular issue (the 'thesis'), the opposing position is then formulated (the "antithesis") and finally a "synthesis is sought between the two extremes, embodying the valuable features of each position and resolving the contradictions between the two". This synthesis then acts as the thesis for the next cycle, truth is seen as a process which develops over time in transactions between people. From this perspective, there can be no statement representing absolute truth. Truth is approached as the middle way between extremes (Kiehn & Swale, 1995). In other words, "dialectics" involves several assumptions about the nature of reality: (1) everything is connected to

everything else (2) change is constant and inevitable and (3) opposites can be integrated to form a closer approximation to the truth (which is always evolving). In conjunction with these principles, DBT emphasises balance in the client's life. Clients are encouraged to walk the middle part by using such principles as mindfulness.

2.1.16.1 Theoretical Basis for DBT

DBT is based on biosocial theory of personality functioning in which Borderline Personality Disorder (the disorder for which Linehen developed DBT) is seen as a biological disorder of emotion regulation. The disorder is characterised by heightened sensitivity to emotion, increased emotional intensity and a slow return to emotional baseline. Characteristic behaviours and emotional experiences associated with BPD theoretically result from the expression of the biological dysfunction in a social environment experienced as invalidating by the patient (Murphy & Gunderson, 1999).

The biosocial theory suggests that BPD is a disorder of self-regulation and particularly of emotional regulation, which results from biological irregularities combined with certain dysfunctional environments, as well as from their interaction and transaction over time (Linehan 1999). Biosocial theory is a theory that explains the problems of people with BPD, the related disorders are therefore important because they offer information which becomes a tool of validation in itself, offering the client the option of seeing their problems as no fault of their own while also offering them the possibility of taking responsibility for future change.

In Linehan's (1993a) theory about how BPD develops, invalidating environments are a primary factor. Such environments are characterised by a parent's inappropriate, unpredictable, or extreme responses when a child communicates his or her experience. The child is told that he or she is wrong in his or her assessment of the situation and is consequently, wrong about his or her emotional response or understanding (both positive and negative). The child then attributes his or her internal experiences to unacceptable personality traits.

Although, a person may be biologically predisposed to BPD (and related disorders like anxiety disorder), invalidating environments have devastating consequences for a young person. First, consistent with the inappropriate and unpredictable caregiver responses, the person is not able or does not learn to label and

regulate emotions as the rest of society does. Also, the person becomes intolerant of stress, has developed unrealistic goals, is easily disappointed, has learned that extreme emotions are required to elicit help and is unable or has learned not to trust his or her own judgement (Linehan, 1993a). Second, an invalidating environment may change the biology in a young person, because of the environment; the person's physiology may be altered or swayed toward emotional dysregulation (Smith & Peck 2004). The focus of DBT is therefore on helping the client learn and apply skills that will decrease emotion dysregulation and unhealthy attempts to cope with strong emotions.

2.1.16.2 Treatment Model of DBT

While using DBT, Koon, Sloan and Bellizi (2002) asserts that therapy should be guided by seven assumptions and several tenants. The first is assumption clients are doing the best they can; second, clients want to improve and third, clients must learn their new behaviours in each and all relevant contexts. Fourth, clients cannot fail in DBT, meaning that any effort the client makes to improve himself or herself is considered progress. Fifth, clients may not have caused all of their own problems, but they have to solve them anyway; and sixth, clients need to do better, try harder or be more motivated to change. Although this may seem inconsistent with the fourth assumption, Smith and Peck (2004) noted that it is consistent with the dialectical framework that is the foundation of DBT. This dialectical framework allows the therapist to both accept the client where he or she is (i.e. any effort is viewed as progress), while at the same time, challenging the client to do better and do more (Smith & Peck, 2004). The seventh assumption is that the lives of individuals with BPD (and its related disorders e.g. anxiety disorder) are unbearable as they are currently being lived (Koons et al., 2002).

The main focus of DBP is emotional dysregulation which may manifest in dysfunction interpersonal dysregulation, self-dysregulation, cognitive dysregulation and behavioural disregulation. DBT skill training therefore addresses these problems with four corresponding behavioural skills module which are discussed hereunder.

Mindfulness: The core skill module, "mindfulness"**,** addresses self-dysregulation and cognitive dysregulation. Mindfulness skills are psychological and behavioural versions of meditation skills usually taught in Eastern spiritual practices (Linehan, 1993a). Often, these patients find themselves making emotional choices. An

important treatment goal is to help them move away from exclusive reliance on their "emotional mind" to using both emotional and rational input to make balanced decisions, called "wise-mind decision". These patients are taught to use mindfulness skills to facilitate observing their experiences in nonjudgmental ways and putting their observations into words-to help make a transition from emotional mind to wise mind. Focused use of these skills ultimately increases their effectiveness in coping with difficult situations (Katz, Gunasekara & Miller, 2002).

Distress Tolerance: This skill module targets behavioural dysregulation and impulsivity and includes both crisis survival skills (i.e. distracting oneself, self-soothing using five senses, making a list of pros and cons) and radical acceptance skills (Katz et al. 2002). These skills help the patient tolerate seemingly intolerable, painful circumstances without engaging in impulsive behaviour like parasuicide, substance-related or other dangerous behaviour. Distress tolerant skills have to do with the ability to accept in a non-evaluative and nonjudgmental fashion, both oneself and the current situation. Although, the stance advocated here is a nonjudgmental one, this does not mean that it is one of approvals because acceptance of reality is not approval of reality.

Emotional Regulation: Under the emotional regulation skill module, the individual is taught how to reduce emotional vulnerability, increase positive experience (resulting in positive emotions), and change current emotion by acting oppositely. According to Stone, Hurt & Stone (1987) and Holmes, Georgescu and Liles (2005), dialectical behavioural therapy skills for emotion regulation include the following:

Identifying and labelling emotions;
Identifying obstacles to changing emotions;
Reducing vulnerability to emotion mind;
Increasing positive emotional events;
Increasing mindfulness to current emotions;
Taking opposite action and,
Applying distress tolerance techniques.

Interpersonal Effectiveness: Interpersonal response pattern taught in DBT skills training are very similar to those taught in many assertiveness and interpersonal

problem – solving classes. The skill addresses interpersonal problems and teaches individuals how to negotiate to get what they want while maintaining good relationships and self-respect (Linehan 1993b).

DBT comprises of a total of four stages of treatment, beginning with "pre-treatment" stage. During pre-treatment (orientation and commitment), the targets on therapy are an orientation to treatment and the agreement on goals, during which the client makes a commitment to therapy. In the first stage of treatment (Attaining Basic Capacity), the targets are addressed in hierarchical order of importance. The most important target is decreasing self-destructive behaviour. After these behaviours have been addressed, the next target is decreasing behaviours that interfere with treatment. This includes problems that threaten the continuation of therapy and those that interfere with the process of treatment. Another target is decreasing quality of life-interfering behaviours. Behaviours causing immediate crises are targeted and easy-to-change behaviours are targeted over difficult-to-change behaviours. The final target is increasing behavioural skill. (i.e. core mindfulness, interpersonal effectiveness, emotional regulation and distress tolerance). The therapist addresses the highest priority target that is relevant at that time. The goal of stage 2 (Reducing post traumatic stress), is the direct treatment of post-traumatic stress. This is only done after the client has had the necessary skills and decides to resolve the trauma. Increasing self-respect and achieving individual goals is the target of the third stage.

2.1.17 Exposure Therapy

The term exposure therapy is derived from Mark's (1975) review of the systematic desensitisation literature where he concluded that mere exposure to aversive cues was as effective as systematic desensitisation. Mark concluded on the basis of a review of emperical literature that exposure to the fearful stimuli is the only necessary and sufficient condition for anxiety reduction.

Exposure therapy is a cognitive behaviour therapy for reducing fear and anxiety responses, especially phobia, based on the principle of habituation and cognitive dissonance. Generally speaking, according to Online Encyclopedia of Mental Disorders, exposure treatment involves presenting patients with anxiety-producing material for a long time to decrease the intensity of their emotional reaction. As a result, the feared situation or thing no longer makes the patients

anxious. To explain further on how exposure therapy works, Otto, Smith and Resse (2004) explains that, in exposure based procedures; patients repeatedly confront feared stimuli under controlled conditions with the goal of dissipating (extinguishing) fears as patients acquire a sense of safety in the presence of these stimuli. The exact stimuli used depend on the disorder under treatment and with specialisation of protocols for each anxiety disorder; interventions are based on specific models of the core fears, avoidance behaviours and cognitive biases thought to maintain each disorder. The goal of exposure therapy, according to Tull (2008), is to help reduce the level of fear anxiety connected with these reminders, thereby also reducing avoidance. By dealing with fear and anxiety, the patient can learn that anxiety and fear will lessen on its own; eventually reducing the extent with which these reminders are viewed as threatening and fearful.

There are some theories on mechanism on how exposure therapy works. For instance, a review of the literature reveals that patients with panic disorder and phobias are prone to overestimate how fearful they will be when exposed to a fear stimulus (Rachman & Bichard, 1998); they are expected to be more fearful than they actually are when exposed to the phobic stimulus. Taylor and Rachman (1994) explain this phenomenon as due to: (a) the over prediction of danger elements and (b) the under prediction of safety resources. Exposure therapy is hypothesised to work because it presumably provides corrective evidence in that participants see that reality is not as bad as their expectations. This explanation is known as stimulus estimation theory of match-mismatch theory. An experimental test of this hypothesis by Wright, Holborn and Rezutek (2002) that obtained predictions and reports of danger and safety in snake-fearful university students provided empirical support for this hypothesis.

Moreover, exposure therapy is also explained based on the theory of extinction. Extinction entails the lack of onset or offset of stimuli with positive or negative reinforcement properties contingent upon either the emission or omission of a response (Tryon, 2005). For instance, Marks (1975) opines exposure to the fearful stimuli to be the only necessary and sufficient condition for anxiety reduction. Supporting this view, Emmelkamp (1994) also concludes based on a review of the empirical literature that exposure to phobic stimuli without avoidance is the essential ingredient in effective behavioural treatment for anxiety disorders. Tryon (2005) then explains the reason why exposure or exposure plus nonavoidance are partially

consistent with an extinction explanation. According to him, it is because a complete extinction explanation needs to (1) define the target behaviour (2) define the reinforcer and (3) show that no onset or offset of the reinforcer occur contingent upon either the emission or omission of that target behaviour.

2.1.17.1 Types of Exposure Therapy

Exposure therapy can be categorised into several ways, based on the duration and methods of exposure. For instance, exposure therapy may be brief. It may contain the use of single – session (or few sessions) exposure as preventive interventions for individuals suffering from trauma. It is more useful when the disorder has not become chronical. On the other hand, exposure therapy can be prolonged i.e Prolonged Exposure Therapy (PE). PE is a theoretically based and highly efficacious treatment for chronic post Traumatic Stress and related depression, anxiety and anger. Prolonged Exposure is a form of individual psychotherapy based on Foa and Kozak's (1986) emotional processing theory which posits that PTSD involves pathological fear structures that are activated when information represented in the structures is encountered. These fear structures are composed of harmless stimuli that have been associated with danger and are reflected in the belief that the world is a dangerous place. Successful treatment requires processing of the fear structures in order to modify their pathological elements so that the stimuli no longer invoke fear.

Also, Taylor (2002), identifies four categories of exposure therapy based on two dimensions: (1) real versus imagined stimuli and (2) gradual versus intense exposure (flooding). These and other categories of exposure therapy shall be briefly explained.

"In vivo" (Real) exposure: This refers to the direct confrontation of feared objects, activities or situations by patients under the guidance of a therapist (Tull, 2008). "In vivo" exposure therapy has been used successfully with a wide range of phobias (Craske & Rowe, 1997; Marks, 1987; Ost, 1997) and is considered to be the treatment of choice for specific phobias (e.g. Antony & Swinson, 2000; Marks 1987; Mathews, 1978). With "In vivo" therapy, patients gradually and systematically have a closer approach to the panic situation of feared objects over a period of several one-hour (or more than that) sessions.

Imaginal Exposure: This entails engaging mentally with the fear structure through repeatedly revisiting the traumatic event in a safe environment (Rizzo, Defede, Rothboam, Johnston, Mclay, Reger, Gahm, Persons, Gaap and Pair, 2009 et.al). In practice, a person with PTSD or other related anxiety disorders typically is guided and encouraged by the clinician gradually to imagine, narrate and emotionally process the traumatic event within the safe and supportive environment of the clinician's office. This approach is believed to provide a low-threat context where the patient can begin to therapeutically process the emotions that are relevant to the traumatic event as well as de-condition the learning cycle of the disorder via a habituation / extinction process (Rizzo et al, 2009).

Interceptive Exposure: was originally designed to treat panic disorder. It is designed to help people to directly confront feared bodily symptoms often associated with anxiety such as an increased heart rate and shortness of breath (Tull, 2008).

Graded or Gradual Vsi Intense Exposure: Graded or graduai exposure refers to exposing the patients to the feared situation in a gradual manner while intense exposure (flooding) refers to exposing the patients to anxiety-provoking or feared situation all at once and kept in it until the anxiety and fear subside.

Virtual Reality Exposure Therapy (VRET): A novel tool for conducting exposure therapy is virtual reality exposure therapy (VRET) in which users are immersed within a computer-generated stimulation or virtual environment (VE), that updates in a natural way to the users head and / or body motion (Parsons & Rizzo, 2008). When a user is immersed in a VE, they can be systematically exposed to specific feared stimuli within a contextually relevant setting. VRET comport well with the emotion-processing model, which holds that the fear network must be activated through confrontation with threatening stimuli and that new, incompatible information must be added into the emotional network (Foa & Kozak, 1986, Wilhelm Pfaltz, Gross, Mauss, Kim & Wiederhold, 2005).

2.1.17.2 Factors Influencing Exposure Outcome

There are certain factors which influence the durability and extinction learning that results from exposure based therapy and it is important to consider some of them.

Advances in animal laboratory have documented that extinction learning resulting from exposure is far from a passive process. Instead, it appears to be an active learning of a new meaning ("relative safety") in relation to the original fear cue (Otto Smith and Resse, 2004). The durability of this new learning depends on the context in which it is learned; after extinction training, memories of the original fear learning and the extinction learning appear to be in competition, with the dominant memory being determined by context. For example, Bouton and associates (cited in Bouton, 2002) have provided compelling evidence that return of fear is likely when that fear was learned in context A, extinguished in context B (e.g. a different cage or a scented room), and then reassessed in context A or in a brand new context i.e., context C. The durability of exposure based learning appears to be dependent on the degree to which the "safety" learning is cued by subsequent stimuli. To create especially durable safety learning (resistance to relapse), efforts need to be devoted to enhance the salience of learning during exposure.

Recent research has documented that extinction learning in human appears to parallel findings from the animal laboratory. Specifically, MystKow-ski and colleagues, (cited in Otto et al, 2004) demonstrat that return of fear following initial response to exposure treatment for spider is more likely to occur when follow-up assessment occurs in a context different from the one in which subjects received treatment.

Moreover, there is increasing evidence that the success of exposure-based procedures is dependent on helping patients construct clear and unambiguous tests of fearful assumptions. For instance, instruction to patients to direct attention to what is objectively occurring during exposure to phobic situations (Wells & Papageorgion, 1995) and inhibition of the use of maladaptive coping behaviours (termed "safety behaviours") enhance exposure outcome (Salkovskis, 1991). The notion of safety behaviour deserves additional comment. Wells et al cited in Otto et al, 2004 raised the important question of why many socially phobic individuals do not improve from the social situations they attend (complete avoidance of social situation is rare). They assessed socially phobic patients and documented the wide use of subtle avoidance or coping behaviours designed to help them endure social events. The utilisation of

these safety behaviours (e.g. holding on to things, walking close to walls and avoiding eye contact with others) appeared to inhibit learning of true safety in exposure (the individual believers, e.g. "I 'survived', but only because I averted my eye") Salkovski et al also cited in Otto et al, 2004 replicated these findings in a panic disorder sample and found greater fear decline in patients who were encouraged to inhibit safety behaviours during an exposure session compared with patients who continued to use these behaviours.

Further recent endurance suggests that clinicians should encourage their patients to discard not only the use of safety behaviours but also their availability. For instance Power, et al (cited in, Otto, Smith and Resse, 2004) observe a 94% response rate for claustrophobic individuals who underwent exposure treatment to a small chamber with no safety behaviour utilisation. They found significantly lower response rates for those instructed to use safety behaviours during exposure (e.g., opening a small window to allow access to fresh air blown in by a small fan) than those who had these options available but were encouraged not to use them (response rates, 44% & 45% respectively).

Distraction is another factor that may decrease the degree of safety learning from exposure (Rodriguez & Craske, 1993). For example Teach and colleagues highlighted the negative effect of distraction in two recent studies in which they showed that claustrophobic persons who were instructed to engage in a cognitive-load task during exposure showed significantly less fear decline compared with those who received the same duration of exposure without the distracting cognitive –load task (Kamphuis & Telch, 2000). Summarising a cognitive perspective on maximising learning from exposure, Well et al (cited in Otto et al, 2004) recommend active elucidation of patients' feared catastrophes and the perceived likelihood of these catastrophes, identification of safety behaviours linked to catastrophic fears, construction of the exposure in a manner that allows testing and disconfirmation of feared catastrophes, elimination (or reversal) of safety behaviours during exposure and active processing (discussion) of what was learned from the exposure. In addition, research on contexts underscores the importance of varying the context of exposure procedures to provide durable learning of safety in response to feared cues (Bouton, 2002).

The psychological dividends of exposure therapy in the treatment of people with phobic disorders or related anxiety disorders is invaluable as it has been proven easy to learn and appeared suitable for use in general practice (Blomhoff, Haug Hellstorm, Holme, Humble, Maugbu and Wold, 2001 et al). Specifically, it has been proven effective in the treatment of social phobia (Chambless & Gillis, 1993; Sheehan, & Lecrubier, 1997) and prevention of PTSD as it directly counters the natural reaction to avoid internal and external reminders of the traumatic event (Cigrang, Peterson & Scholbitz 2005). Cigrang et al (2005) explain that, most individuals exposed to severe trauma want desperately to forget the event and not experience any of the cognitive, emotional, behavioural, or physical symptoms associated with the event again. In theory, the natural tendency to avoid internal and external stimuli may in actuality make it more likely over time that symptoms will be triggered wherever stimuli are encountered that remind the individual of the initial traumatising event. Repeated exposure appears to lead to habituation and potential extinction of extreme emotional responding to trauma memories in a relatively quick period of time. Decreased emotional responding may then provide the opportunity for the individual to organise his or her beliefs and perceptions of the trauma in a manner that restores feelings of competence and promotes a realistic and manageable view on environmental threats (Foa & Kozak, 1986).

2:2 EMPIRICAL REVIEWS

2.2.1 Test Anxiety and Students with Learning Disabilities

Students with LD are hypothesised to have basic psychological and or neuropsychological deficits that impede their ability to perform well in basic academic areas (Swanson, 2005). These problems increase the likelihood that classroom tests will be regarded as a substantial threat, thus increasing test anxiety (Hancock, 2001). In fact, studies have shown that students with LD are faced with the problem of test anxiety (Bryan, Sonnefeld, & Grabowski, 1983; Heiman & Precel, 2003; Kovach, Wilgosh, & Stewin, 1998; Swanson & Howell, 1996). Swanson and Howell examine the relationship between test anxiety and academic achievement, academic self-concept, cognitive interference and study habits in a sample of 82 students with LD and behaviour disorders. Swanson and Howell find that test anxiety was positively correlated with cognitive interference ($r = .58$) and negatively correlated with study habits ($r = -.38$), academic achievement ($r = -.25$), and academic

self-concept (r = -.38). They performed a stepwise multiple regression analysis with test anxiety as the criterion variable and cognitive interference, academic achievement, academic self-concept and study habits as the predictor variables. They found that cognitive interference and study habits accounted for 32% and 6%, respectively, of the variance in the test anxiety scores. The regression equation containing these two predictor variables accounted for a total of 38% of the variance in the test anxiety scores. In a study conducted by Hughes (1991), students with LD self-reported that they had difficulties when studying for and taking exams; 84% of these students with LD requested and received test accommodations. During exams, students with LD reported more stress, nervousness, frustration, helplessness and uncertainty than students without LD. Students with LD also had more concentration difficulties in evaluative situations than their peers without LD (Heiman & Precel, 2003).

Only a few published studies have examined the relationship between students with and without LD and test anxiety in elementary and secondary school settings (Bryan et al., 1983; Ford, Pelham, & Ross, 1985; Fulk, Brigham, & Lohman, 1998). Bryan et al. (1983) examine the relationships between students with and without LD and test anxiety scores and between test anxiety scores of students with LD and their reading and mathematics achievement test scores. The sample consisted of 60 students – 30 with a learning disability (21 boys and 9 girls) and 30 without learning disability (21 boys and 9 girls) – in Grades 3 through 8. Racial / ethnic composition of the sample was 100% European American. The students completed the Test Anxiety Scale for Children (TASC; Sarason, Davidson, Lighthall, Waite, & Ruebush, 1960), a unidimensional measure of test anxiety, the Lie Scale for Chidlren (LSC; Sarason, Hill, & Zimbardo, 1964), and the Understanding Scale (Bryan et al., 1983). Students' scores from academic achievement and intelligence tests were made available to the investigators prior to the commencement of the study. The results of the study revealed that students with learning disabilities were more test anxious than those without learning disabilities, and students with LDs' test anxiety scores were a significant predictor of their reading and mathematics achievement test scores.

Fulk et al. (1998) investigate motivation characteristics among a total sample of 115 students (76 boys and 39 girls), 36 students with LD (25 boys and 11 girls), 26 students with emotional and behavioural disorders (EBD; 22 boys and 4girls) in Grades 6 through 8. The students completed three self-report inventories, including

the Motivation Orientation Scale (MOS; Nicholls, 1989), the Purposes of School Scale (POSS Nicholls, 1989), and the Motivation Strategies for Learning Questionnaire (MSLQ; Pintrich & De Groot, 1990). The MSLQ consists of five subscales, and one of which is a test anxiety subscale. Significant group differences were found in the study, including a significant group difference on the MSLQ Test Anxiety subscale. Students with EBD reported more feelings of nervousness and anxiety in testing situations than students with LD and students without disabilities. No statistically significant difference in test anxiety scores was found between the those with learning disabilities and students without disabilities.

Ford et al. (1985) assess selective attention deficits in students with and without a reading disability and high and low test anxiety. The sample consisted of 115 boys – 19 students with reading disability in Grades 2, 4 and 6 and an equal number of students without a reading disability in each of these grades. The students were administered the TASC and the Defensiveness Scale for Children (DSC; Sarason et al., 1960). Students who obtained a DSC score in the upper 10% of the total distribution of scores were excluded from the study. Ninety-three students continued the study. Of these 93, 25 with reading disability had high test anxiety, 17 students with a reading disability has low test anxiety, 21 students without a reading disability had high test anxiety, and 30 students without a reading disability had low test anxiety. The 93 students completed three selective attention tasks: a visual incidental learning task, an auditory incidental learning task, and a speeded classification task. The results of the study revealed no difference in selective attention deficits between high and low test-anxious students. However, there was a marginal tendency for older students with reading disability to be in the high test-anxious group than older students without reading disability.

In Bryan et al. (1983), Fulk et al. (1998), and Ford et al. (1985) studies, unidimensional measures of test anxiety were used to make direct comparisons between students with and without LD. However, advances in the field of test anxiety have shown that in addition to the accepted dimensions of physiological arousal and worry, cognitive obstruction or interference (Swanson & Howell, 1996), social derogation (Friedman & Bendas-Jacob, 1997), and the facilitating or performance-enhancing nature of low levels of test anxiety (Alpert & Haber, 1960) provide a more complete explanation of the construct. Studies like those of Swanson and Howell

(1996) and Hughes (1991) provide an intriguing look at how cognitive interference and nervousness (i.e., worry), respectively, are greater problems for students with LD.

In a recent study by Sena, Lowe and Lee (2007), they used Test Anxiety for children and adolescents for 774 students from mid-western public schools. Among these students 195 (125 boys and 70 girls) were classified as students with LD by school multidisciplinary terms while 579 students who were not identified as students with LD consisted of 243 boys and 336 girls. The result of their study indicated that learning disability predicted higher cognitive obstruction / inattention scores, high worry scores and lower performance enhancement / facilitation anxiety scores.

2.2.2 Gender Differences in Test Anxiety

A limited number of investigations, all of which have been conducted in the educational realm, have presented data that provide some insights into the possible moderating role of gender in TA relations. Almost all investigations of gender differences in test anxiety indicate that girls consistently show higher levels of anxiety than boys, especially in grade 5 to 10 (Hembree, 1988). In fact, Hembree (1988) meta-analysed the findings of 154 studies of test anxiety and gender and found strong evidence that females experience higher levels of anxiety than males (mean effect size = .29). Also, a study by Ahlawat (1989) investigated the sex differences in test anxiety in a sample of 3,572 Jordanian high school and community college students. The school students were 1, 014 male and 839 females studying in the 12^{th} grade. Community college students were 768 males and 951 females from both the first and second years of the two-year community colleges. It was found that girls showed a tendency to score higher than the boys on the test anxiety scale.

In addition Seipp & Schwrzer (1996), conducted a meta-analysis on gender differences in test anxiety among 6, 340 school-age students across 12 different cultures (China, Czechoslovakia, Germany, Holland, Hungary, India, Iran, Italy, Jordan, Korea, Turkey and the United States). Cross-cultural adaptations of the Test Anxious Inventory (TAI; Speielberger, 1980) were used in each of these independent studies. Seipp and Schwarzer found statistically significant gender differences in text anxiety in all countries except China. Girls scored statistically significantly higher than boys on the TAI, with a mean gender effect size of .29.

A frequent interpretation of gender differences explain them in terms of differences in socialisation patterns (Maccoby & Jacklin; 1974), differences in coping

styles and differences in willingness to admit to anxiety (Zeidner, 1998). Girls are more emotional, have less self-control and disclose more personal information. Thus they seem to admit anxiety more quickly, considering that they, in comparison to boys lose less regard when they report their levels of anxiety. Also, girls are probably actually more effective by the test situation and view this situation as anxiety-evoking, because they seem to be more socially motivated (Rost & Schermer, 2001).

The possible moderating role of gender in Test Anxiety relations has also been established. At least three studies have found results suggesting that gender does act as a moderator (Sipos, Sipos, & Spielberger, 1986; Smith, Micheal & Hocevar, 1990, Spielberger 1980). In each case, the relationship between test anxiety and test performance was stronger for males than for females. For example, Smith et al (1990) examine test anxiety among 130 high school students. Results indicated that when exposed to anxiety inducing instructions, highly anxious males demonstrated a greater decrement in performance in a mathematics test than highly anxious females. In another investigation, Sipos et. al (1986) administered the TAI to a sample of 120 Hungarian students. Stronger relationships between test anxiety and test performance were found for males (r = -.40) than for females (r = - .17). Finally, administering the TAI to several student samples, Spielberger (1980) report that the relationships between TA and cognitive test scores were stronger for males (r = - .23) than for females (r = - . 15).

The reason adduced to this strong correlation between test anxiety and test performance among males than females has been linked to coping style. A considerable amount of research has indicated that female reactions to stress and anxiety are both qualitatively and quantitatively different from those of males (McCarthy & Goffin, 2005). In particular, research suggests that females have a tendency to engage in significantly more coping strategies than their male counterparts. For example, a study by Ryan, Ployhart, Greguras, and Schmit (1998) found that female job applicants were more likely to attend a test preparation programme than males. Females also demonstrate a stronger tendency to regulate stressful emotions, a process that is commonly referred to as Emotional –Oriented coping (Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, 1986, Long, 1990). Recently, higher level of coping behaviour among females have been found in a meta-analysis that examined sex differences in a wide range of coping styles (Tamres, Janicki, & Helgerson, 2002).

However, in spite of these research findings in support of gender differences in test anxiety, some other studies have supported the notion that males and females experience no significant differences in general test anxiety (e.g. D'Ailly & Bergering, 1992; Everson & Millsap, 1991; Mwamwenda, 1993; Zoller & Ben-Chaim, 1990).

2.2.3 Test Anxiety and Academic Performance

A considerable amount of research, much of which has been conducted in the educational realm, has found that high levels of test anxiety are linked to low scores in tests (Zeidner, 1998). As early as 1957, Sarason compared general anxiety and academic achievement in a sample of first, second and fourth year students. He found that there is a significant correlation between anxiety and academic achievement (.19) for first and second-year students and (.14) for fourth-year students. Heinrich (1979) also finds that when he considered intelligence in his statistical analysis, anxiety trait influences anxiety state and academic achievement in students of high mental ability.

Using an Egyptian Sample, Mattar (1981) found that the relationship between anxiety and academic achievement was positive and statistically significant for scientific section students, whereas it was negative for literary section students. Soloman (1979) studied the acceptance of superior and retarded sons and their parents' attitudes towards academic achievement and its relationship to their anxiety level among 405 secondary school student in Cairo, Egypt. He found a statistically significant correlation between anxiety and academic achievements in males. For females, the correlation was not significant.

Othman (1975) found that academic achievement did not differ with anxiety; it differed with the variance of interaction between the level of anxiety and with the experimental situation. Kazeem (1973) found that female university students in scientifically and literary sections did not show a systematic correction between anxiety trait and academic achievement, as the relationship was curvilinear.

Speilberger (1979) found that students with high-test anxiety tend to blame themselves for their poor performance, while low test-anxious students did not. He also found that high test-anxious students apparently respond to examination stress with intense emotional reactions and negative self-centred thought that impair performance, while those low in test anxiety react with increased motivation and concentration. Gaudry and Speilberger (1971) found that at the college level, there is

evidence that anxiety tends to be associated with lower grades and higher dropout rates.

Hembree (1988) also conducted a meta-analysis which was based on 562 studies. Measures of performance included cognitive ability tests, problem-solving tasks, achievement measures and grades. Overall, test anxiety demonstrated a weak negative relationship with test performance (uncorrected r = - .8). A second metal-analysis, conducted by Seipp (1991) (126 studies published from 1975 to 1988) restricted her focus to studies that investigated the relationship between test anxiety and academic test performance. Overall, Seipp's findings also revealed a weak negative relation (corrected r = - .23). This means high-test anxiety accompanies poor performance.

In their own study, Schmit and Ryan (1992) also examine test anxiety in the realm of personnel selection by assessing 15% students using an employee selection stimulation. A negative relation (uncorrected r = -.44) was found between test anxiety and the School and College Ability Test (SCAT).This is consistent with the earlier study of Arvey, Strickland Drauden and Martin (1990) who found that, test anxiety was negatively related to scores on cognitive ability test (uncorrected r = -.35) among 263 examined applicants for a financial worker position.

In a later study, Schmit and Ryan (1997) examine level of test anxiety in 3,290 police force applicants, a significant but weak negative relationship (uncorrected r = -.11) was obtained between test anxiety scores on a cognitive – based selection instrument. In addition, Fletcher, Lovatt and Baldry (1997) examine the role of test anxiety in a sample of 38 assessment centre candidates. A significant, moderate, negative relation between test anxiety and test performance was found (uncorrected r = - .34).

In a recent study conducted by McCarthy and Goffin (2005) using a sample of 242 participants of which 142 were females to assess the relationship between test anxiety and selection test performance, the results, indicated that both TA – emotionality and TA – worry were negatively related to performance on the Cognitive Ability Composite (r = - .35). The finding suggests that TA has an effect on test performance that is independent of prior ability levels.

In a sample of 400 male and female students in the Basic Education College in Kuwait, EL-Anzi (2005) used the Beck Anxiety Inventory to examine the relationship between academic achievement and both anxiety and pessimism. The result proved a

negative correlation between academic achievement and both pessimism and anxiety. Also, Lindsay (2002) examines the effects of high level of test anxiety on attention and memory skills. Twenty-four undergraduate students answered questionnaires measuring their level of test anxiety, performed cognitive tasks measuring attention through a modified version of the stroop task and were assessed for hits and false alarms in a paradigm designed to evoke both neutral (e.g., "sweet"), and anxiety related (e.g., "test") false memories. Results indicated test anxiety had a negative impact on performance scores for high test-anxious individuals over low test anxious individuals, though only on some cognitive measures. Individuals with high levels of test anxiety displayed slower times on attention measuring tasks than slow-anxious individuals and were more apt to falsely remember memories related to anxiety. However, high-anxious individuals showed equivalent performance to low-anxious individuals on other attention-measuring tasks, recall of neutral false memories and correct hits (Lindsay, 2002).

2.2.4 Gender and Learning disabilities

A considerable number of researches have tried to identify gender influence on the prevalence of learning disabilities. For instance, in a study by Bandian (1999), elementary school age male students with LD were seen as outnumbering females with LD in a ratio of 3:2:1 for those who exhibited differences between listening and reading comprehension. Specifically, Abramowic and Cheu (1981) cited in Dilshad, 2006). note that numerous neurodevelopment disorders including cerebral palsy, attention – deficit hyperactivity disorder (ADHD), autism speech, language disorders and learning disabilities are diagnosed more often in boys than in girls.

In order to explain the reasons for gender differences in learning disabilities, several researchers have propounded theories which lay emphasis on the importance of gender differences in rate of maturation (OunSted, 1972) chromosomal structure (Childs, 1965), thresholds of genetic vulnerability (DeFries, 1989), thresholds of genetic vulnerability to birth complications (Singer, Westphar & Niswander, 1968) as possible explanations of male prevalence neuro – developmental disorders.

Girls with LD may be underestimated, putting them at risk of academic, social and emotional challenges (Shaywitz, Escobar, Shaywitz, Fletcher and Makuch, 1992). Teachers refer boys more often than girls for assistance prior to special educators.

Greenbaum, Graham & Scales, (1996) report some factors that lead to significantly high reference of boys. According to them, boys tend to have more externalising problems. More optimistic view about girls were observed such as, girls will improve as they mature. Social expectation for girl's academic learning was not consistently high. Girls exhibit more passive behaviours such as sitting and daydreaming, so they are less likely to be identified than boys (Shaywitz et al 1990). Smith (2004) also reveals that boys are 1.5 or 6 times more likely to be identified than girls are. Boys are far more likely to be identified as having learning disabilities despite the research suggesting an equal incidence of LD among boys and girls (Dilshad, 2006). This according to Dilshad, could be linked to possible medical, maturational, sociological and brain organisation factors.

Liederman, Kantrowitz and Flannery, (2005) review studies that were designed to minimise ascertainment bias in the selection of individuals with reading disabilities. These include population –based studies that identified children with reading difficulties by objective, unbiased methods and studies that examined the gender ratios among the affected relatives of those diagnosed with reading difficulties. Authors concluded that even when ascertainment biases were minimised, there is still a significant preponderance of boys with reading difficulties, although the gender ratio of the affected relatives of those with reading difficulties manifests the weakest male bias. This suggests that male prevalence of reading difficulties is not a myth but a reliable phenomenon. (Dilshad, 2006) Reanalysing the data from the twin study published by Bakwin (1973), Defries Gills and Walsworth (1993) demonstrate that the difference between female identical and fraternal twin concordances was greater than that between male identical and fraternal twin concordances.

A Quebec study on the dropout rate of 403 males and females (67% age 17 to 19; 22% older than 19 and 11% aged 16 or less) found that the incidence rate of dropout was the same for both genders but that the reasons given for dropping out differed (Theoret & Hrimech, 1999). Male tended to give the following reasons: boredom with school, suspension or expulsion from school, desire to learn a trade, and interpersonal problems with members of other ethnic or cultural groups. Like males, females gave boredom as one reason for dropping out, but they cited other reasons, including the birth of a baby, family and personal problems (Learning Disabilities Association of Canada, 2005).

Gender differences in graduation rates of post secondary students have been reported as follows: a rate of 32% versus 29% for graduates versus non-graduates for males with LD and 35% versus 17% for females (Vogel Hurby, & Adelman 1993). Females with LD tend to graduate from post secondary institutions at higher rate than males (Learning Disabilities Association of Canada, 2005).

However, despite all these gender differences noted by researchers, Share & Silva, (2003) found the incidence rate for reading difficulties to be equivalent for males and females. Balancing the conflicting reports on gender differences in learning disabilities, Badian (1999) found that if identified by research criteria, there were no differences in gender, but if learning disabilities were identified by general education teachers and / or special education teachers, there was twice as many boys identified compared to girls. Zabel and Nigro (1999) however, found gender pattern was reversed for learning disabilities classification, with nearly 78.6% of females who had been in special education.

In a research conducted by Vogel and Walsh (1987) to examine gender differences in level and pattern of cognitive abilities in 28 learning disabilities college-able females (CA 18 to 25) as compared to 21 LD college-able males (CA 18 to 25). Both groups were in average IQ range as measured by Wechler Adult intelligence scale, with LD males significantly higher on the full scale IQ and three out of the four subtests: Picture completion, block design, and information. The LD females performed significantly better on the Digit symbol subtest. The hierarchies of subtest performance and Bannatyne and ACID category scores were compared. LD females have strengths in visual motor abilities and verbal conceptualisation, while the LD males' highest abilities were nonverbal visual – spacial confirming earlier studies on younger LD individuals and non – LD males and females. Performance on the Digit Symbol Subtest was the next lowest for males, the highest for females. However, for both groups, short and long-term memory for digits and factual knowledge and mental arithmetic problem solving were relative weakness. The result indicates different patterns of cognitive abilities in LD females and males which have implication for identification, services, and prognosis for the learning disabled, especially females.

2.2.5 Empirical Support for DBT

The strongest level of evidence for a given treatment is the support of numerous randomised clinical trials, conducted by different investigators that compare the treatment with alternative treatment or with no intervention. (Drake et al cited in Swenson, Turrey & Koerner, 2002). Several studies have examined DBT in conjunction with BPD symptomology with persons who self-harm. Much of the research has compared DBT with the standard practice by therapists in the institution or clinic within which the study was conducted. Available research evidence showed that DBT is significantly effective in the treatment of BPD and the related disorders.

The original study by Linehan and associates (Linehan, Armstrong, Suarez, Allmon & Heard 1991, Linehan, Heard, & Armstrong, 1993 and Linehan, Tuket, Heard & Armstrong, 1994), was of women who met criteria for borderline personality disorder and who had both a history of suicide attempts and a recent attempt. Some of the women received one year of standard comprehensive DBT. Women in the treatment-as-usual condition were referred to substance abuse or mental health treatment programmes in the community, or, if they were receiving treatment when they entered the study, they were allowed to continue with individual psychotherapy. They also received case management as needed.

After one year of treatment, women who received DBT reported less anger and better global social adjustment than those in the comparison group, and interviewers' ratings of their global adjustment were good. The two approaches were equally effective in producing clinically significant improvement in depression. At the six-month posttreatment follow-up, those who received DBT reported significantly fewer parasuicide episodes, fewer episodes of medical treatment for parasucidal behaviour, fewer days of psychiatric hospitalisation, and less anger than those in the comparison group and interviewers' ratings of their social adjustment and employment performance were better. They were also more likely to have stayed in treatment. One year after treatment, those who had received DBT continued to have fewer days of psychiatric hospitalisation, better global adjustment and better interviewer-rated social adjustment and employment performance. However, although DBT reduced parasuicide more quickly, 12 months after treatment, the women in the comparison group had a similarly lower rate of parasuicide.

Koons, Robins, Tweed, Lynch, Gonzatez and Morse, (2001) replicated these findings at a Veterans Affairs clinic by comparing a six-month course of standard

comprehensive DBT with treatment as usual. Treatment as usual was delivered by self-identified cognitive-behavioural therapists. Participants were women veterans who met criteria for borderline personality disorder. Unlike the women in the study by Linehan and her group, those in the VA sample were not required to have a history of parasuicide or a recent suicide attempt. Thus the VA sample was less parasuicidal and had a lower rate of previous hospitalisation. At the end of the six-month treatment period, Koons and associates found that treatment retention was good for both groups and that those who received DBT experienced less suicidal ideation, depression, hopelessness, and anger than those in the comparison group.

Linehan, Schmidt, Dimeff, Craft, Canter and Comtois (1999) reported on a randomised clinical trial of an adaptation of DBT for women with a dual diagnosis of a substance use disorder and borderline personality disorder. The adapted treatment entailed four major modifications to standard DBT: the addition of specific targets relevant to drug use; a set of attachment strategies intended to enhance patients' connection to therapy and the treatment team; an optional, tapered drug-replacement programme; and case management. Women in the treatment-as-usual group received multiple referrals for treatment in the community. During treatment and four months after, the women who received DBT had significantly less drug abuse than those in the comparison group as measured by both structured interviews and urinalyses. In addition, the women who received DBT were more likely to stay in treatment. However, no significant differences were found in the amount of medical or psychiatric inpatient treatment received during the course of treatment. Four months after the treatment, those in DBT showed significantly more gains in global and social adjustment and in state and trait anger.

Safer Telch & Agras, (2001) conducted a randomised controlled trial comparing outcomes for 31 women with bulimia nervosa who either received 20 weeks of individual DBT psychotherapy sessions or were assigned to a waiting list. The major modifications to standard DBT included a shorter treatment period, specific targets relevant to binge eating and purging and inclusion of systematic skills training, with use of a manual, in individual psychotherapy sessions. The manual-based DBT focused on training in mindfulness, tolerance of distress and skills to regulate emotions, all of which were drawn from Linehan's skills training manual (Linehan, 1993b). Using an intent-to-treat design, Safer and colleagues found that the women who received DBT experienced highly significant decreases in bing-purge

behaviour compared with the women on the waiting list. None of the women who received DBT dropped out of treatment.

Turner (2000), compares a DBT-oriented treatment with client-centred treatment by using an intent-to-treat design with a racially diverse sample of men and women in a community mental health clinic. The two treatments were delivered by the same experienced therapist over one year. The DBT – oriented treatment condition modified standard DBT with psychodynamic case conceptualisation and incorporated skills training into individuals DBT psychotherapy sessions so that the number of hours of clinical contact was equivalent to that in client-centered therapy. In both approaches, six group sessions that focused on significant interpersonal relationships were offered to participants. When treatment ended, participants who received DBT-oriented treatment had clinically significant reductions on measures of suicidal ideation, were more likely to have remained in treatment, and had experienced fewer days of psychiatric hospitalisation. Those in DBT also showed greater improvement on measures of depression, impulsiveness, anger and global psychological functioning.

A study by, Low, Jones, Duggan, Power & MacLeod (2001) with clients who inflicted harm on themselves, DBT has been found to decrease self-harm, dissociative experiences, depressive symptoms, suicidal ideation and impulsivity. Another study on suicidal adolescent participants showed fewer psychiatric symptoms, less suicidal ideation and fewer symptoms of BPD after 12 weeks (Rathus & Miller 2002). Miller, Wyman, Huppert, Glassman, and Rathus (2000) found that specific skills such as mindfulness and distress tolerance skills increased and were found to be helpful to suicidal adolescents involved in DBT treatment.

DBT has also been applied to other treatment groups. In a pilot study with depressed elderly adults, medication plus DBT skill training decreased self-reported depression (Lynch, Morse, Mendelson & Robins, 2003). In another study, Linehan et al. (2002) reported on the effectiveness of DBT or DBT plus a 12 – step programme with women diagnosed with BPD and heroin dependence. The two groups were not different in their opiate use and conclusion of 4 months post treatment, and the DBT-only group had a significantly higher dropout rate than the DBT with 12-step group. Similarly, a clinical trial compared the effectiveness of DBT with women who have BPD and women who have BPD and substance abuse and found that DBT was useful for treating BPD, but was not more effective than the treatment as usual group in

reducing substance abuse problems (Van den Bosch, Verheul, Schippers & Van den Brink, 2002). Finally, Dimeff, Rizyi, Brown, and Linehan (2000) report that DBT is effective in treating methamphetamine dependence in women with BPD. Overall, the empirical support for DBT indicates that it is an effective treatment.

2.2.6 Empirical Support for Exposure Based Therapy

A good deal of research has shown that exposure therapy is effective for reducing negative affective symptoms (Rothbaum & Schwartz, 2002). In vivo exposure therapy has been found to have greater efficacy when compared to imaginal exposure, especially in the treatment of specific phobias (EmmalKamp, 2003). Exposure to emotional situations and prolonged rehearsal result in the regular activation of cerebral metabolism in brain areas associated with inhibition of maladaptive associative processes (Schwartz, 1998). Identical neutral circuits have been found to be involved in affective regulation across affective disorders (De Raedt, 2006; Mineka, Watson, & Clark, 1998). Systematic and controlled therapeutic exposure to phobic stimuli may enhance emotional regulation through adjustments of inhibitory processes on the amygdala by the medial prefrontal cortex during exposure and structural changes in the hippocampus after successful therapy (Hariri, Bookheimer, & Mazziotta, 2000).

In studies by Keane and associates (see Keane & Kaloupek 1982; Keane, Fairbank, Caddell, Zimering 1989), Kean found that exposure therapy was effective in treating the PTSD symptoms of Veterans. In Keane's randomised clinical trial involving 24 Vietnam Veterans, Kean found that exposure therapy was effective in reducing many of the Veteran's PTSD symptoms, including nightmares, flashbacks, memory and concentration problems, and irritability. Also, research by Foa and her colleagues (See Foa, Rothbaum, Riggs, & Murdock 1991; Foa & Meadow, 1997) showed that exposure therapy was effective in reducing PTSD symptoms of rape victims, including persistent fear. The improvements were seen immediately after exposure therapy and were shown to be sustained during a three-month follow-up.

Cigrang, Peterson and Schobitz (2005) also conducted a research on brief exposure-based treatment using three cases of military members seeking help at a forward-deployed medical clinic in Iraq for PTSD symptoms following combat – related traumas. Treatment involved repeated imaginal exposure and in vivo exposure

conducted in four therapy sessions over a five-week period. Baseline measures on the PTSD checklist were at a level that is considered to be in the range of PTSD. The results indicated that after four treatment sessions, PTSD symptoms were reduced by an average of 56%, and the final PTSD checklist scores were within normal limits. The results suggest that prolong exposure therapy may be rapid in individual treatment for the secondary prevention of combat-related PTSD.

In an interesting series of studies, Foa and Colleagues (Foa, Dancu, Hembree, JayCox, Meadows, & Street, 1999; Foa & Rauch, 2004) and others (Marks, Lovell, Noshirvana, Livanou & Thrasher, (1998) attempted to determine whether there is a treatment advantage to multi-component CBT interventions for PTSD over exposure therapy alone. Foa et al (1999) found no significant differences in treatment outcome when comparing exposure therapy, Stress Inoculation Training (SIT), and SIT plus exposure therapy. Similarly, Mark et al (1998) found no advantage of combining cognitive psychotherapy with exposure in comparison to exposure therapy alone. Although there was no statistically significant group difference in either study, the direction of the mean differences favours exposure therapy alone on many of the dependent measures.

In a more recent study Foa and Rauch (2004) also found that adding cognitive therapy to exposure therapy did not result in greater improvement in negative cognitions for patients with PTSD. Thus, a consistent finding in these studies has been an absence of advantage for combined CBT treatment over exposure therapy alone for PTSD.

The comparative empirical support for exposure therapy was also recently documented in a review by the Institute of Medicine at the National Academics of Science of 53 studies of pharmaceuticals and 37 studies of psychotherapies used in PTD treatment (Institute of Medicine Committee on Treatment on Posttraumatic Stress Disorder, 2007). The report concluded that while there is not enough reliable evidence to draw conclusions about the effectiveness of most PTSD treatments, there is sufficient evidence to conclude that exposure therapies are effective in treating people with PTSD.

A study by Goldfried, Linehan & Smith (1978) compared two reducing test anxiety with a waiting list control condition in a sample of 36 University students. In the first, systematic rational restructuring, participants were trained to realistically re-evaluate imaginally presented test-taking situations. In the second, a prolonged

exposure condition, the same hierarchy items were presented but with no instructions for coping cognitively. Rational restructuring was however found to be more effective in reducing test anxiety, followed by the prolonged exposure. There were no changes for the waiting-list control.

2.3 Appraisal of the Literature Review

There seems to be a consensus of opinion among authors about the primary diagnosis of learning disabilities as researchers whose works were reviewed noted that the primary indicator of learning disabilities is academic underachievement (Hallahnm and Kauffman, 1994; Santrock, 2003; Heward, 2000; Lerner, 1997; Mba 1995). However, despite the fact that without academic underachievement learning disability could not be suspected, there is a plethora of research evidence that there are other behavioural problems associated with learning disabilities. Such behavioural problems include social skill problems, low self-esteem, poor self concept, frustration, depression and anxiety disorder among many others (Bryar 1991; Vaughn, 1991, Lerner, 1997; Silver, 1995). These behavioural problems do not only affect the intra and inter personal relationship of students with learning disabilities; they equally have a negative consequence on their ability to maintain positive attitudes, sufficient motivation and persistence needed to meet educational expectations.

Among the emotional or behavioural problems reported by researchers, anxiety disorder is one of the prominent behavioural problems (Bailey and Andrews, 2003). Although, there are variations in the prevalent rate of anxiety disorder reported by researchers, there is a common notion that people with learning disabilities are much more prone to anxiety disorder than normal population; the reasons which could be traced to factors like inadequate social support, inadequate social and cognitive resources and poor coping skills.

In relation is academic achievement, one notable type of anxiety commonly reported among students with learning disabilities by researchers whose studies were reviewed in this study is test anxiety. The reasons attributed to test anxiety among this group of individuals are basic psychological and or neuropsychological deficits that impede their ability to perform well in basic academic areas. These factors, as a matter of fact, increase the likelihood that the classroom test will be

regarded, among people with learning disabilities, as a threat thus increasing test anxiety.

In order to explain the causative factors of test anxiety among people with learning disabilities and in the general populace, two models were reviewed, in this study, which are: Interference and skill deficit models. The interference model suggests that the students who suffer from test anxiety do not necessarily lack in intellect or drive but that the evaluative threat posed by the testing situation interferes with the students' ability to retrieve what was learned (Toba 1990; Sarason 1896). This, according to the proponents of interference model, inhibits the power to recall and limits the ability to engage in higher order thinking.

On the other hand, the assumption that the lower test scores obtained by test anxious students are attributed to inadequate study habits, or to deficient test taking skills rather than to interference by anxiety is a position held by researchers of skill deficit model. The model claims that high test anxious students have difficulty in learning and organizing materials and that this results in poor performance. The position of this model is that students have not developed the necessary strategies to encode, organize and store the materials at hand.

This study is therefore anchored on these two models as they are capable of causing the test anxiety among the people with learning disabilities. They may equally have influence on the effectiveness of the two therapeutic interventions (Dialectical behaviour and exposure therapies) used in this study for treatment of test anxiety among students with learning disabilities.

2.4 The Conceptual Model for the Study

The conceptual model which is the theoretical framework of the study explains the procedure the study will follow during the investigation. The model for this work, as in many others contains three variables namely: the Independent variables, the Moderating variables and the Dependent variables.

The Independent variables which would be manipulated in the study to ascertain their efficacy on the dependent variable include Dialectical Behavioural Therapy (DBT), Exposure Therapy (ET) and the control group. The moderating variables are factors which may mediate a direct relationship between the independent and dependent variables and thereby affect the outcome of the treatment. They include the organismic and environmental factors. For the purpose of this research,

organismic factors include Age, sex, cognitive ability, level of cognitive distortion, the nature of learning disability, motivation, emotion, level of self-esteem, level of anxiety. The environmental factors include the school environment, family background, socio-economic status, peer influence, culture, religious affiliation, level of stigma and discrimination. However, gender and the nature (types) of learning disabilities are considered in order to give the research a focus

The dependent variables explain the results and the desired outcome of the research due to effective manipulation of the independent variables. As regards this research work, dependent variables include test anxiety of the participants.

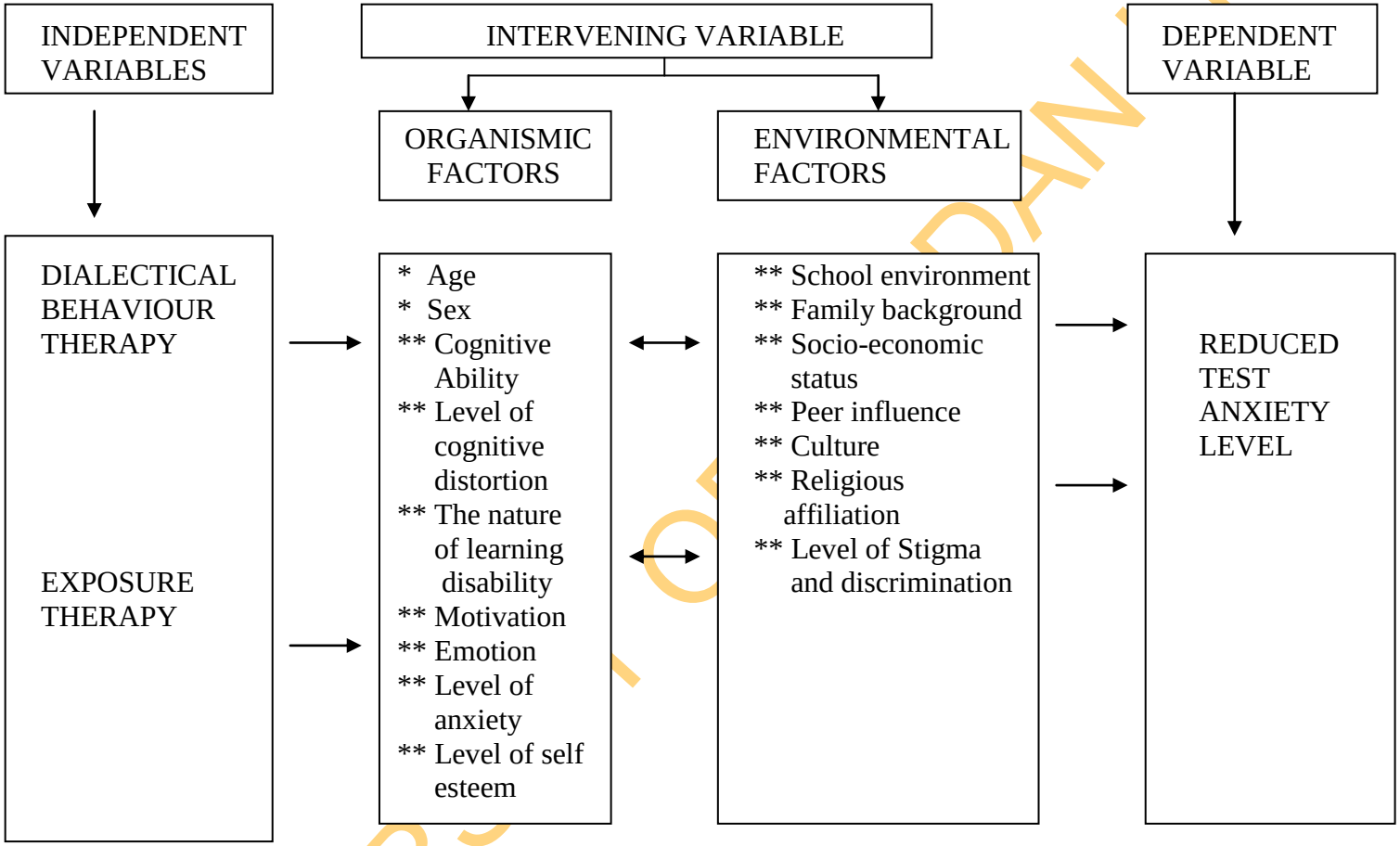
The interaction of the three variables (independent, moderating and dependent variables) in the study is represented with the behavioural equation S – O- R.

S - Stimulus (Independent variables)

O - Organism (Intervening variables)

R - Response (Dependent variable

FIG 1: CONCEPTUAL FRAMEWORK



S s = Stimulus → O o – organism → R R - Response

2.5 Statement of Hypotheses

The following null hypotheses were formulated and would be tested at 0.05 level of significance.

(1) There will be no main effect of treatments on test anxiety of participants.

(2) There will be no main effect of types of learning disability on test anxiety of participants.

(3) There will be no main effect of gender on test anxiety of participants.

(4) There will be no interaction effect of treatments and gender on test anxiety of participants.

(5) There will be no interaction effect of treatments and types of learning disability on test anxiety of participants.

(6) There will be no interaction effect of gender and types of learning disability on test anxiety of participants.

(7) There will be no interaction effect of treatments, gender and types of learning disability on test anxiety of participants.

CHAPTER THREE

METHODOLOGY

The methodology for this study is presented in this chapter with the details of the procedure described under the following headings; Research design, population and sampling procedures, instruments, therapeutic procedures, control of extraneous variables and data analysis.

3.1 Research Design

This study adopted a pretest-posttest control group quasi-experimental design using 3 x 3 x 2 factorial design. The experimental groups and the control group formed the row (A1, A2, A3) while the three major types of learning disability mediated by the gender of the participants constituted the column.

TABLE 3.1.: 3 X 3 X 2 Factorial Matrix

Treatment	Types of learning disability					
	Dyslexia		Dyscalculia		Dysgraphia	
	Male (B1)	Female (B2)	Male (C1)	Female (C2)	Male (D1)	Female (D2)
Dialectical Behaviour Therapy (A1)	A1+B1 N=5	A1 +B2 N=9	A1 + C1 N=3	A1 + C2 N=4	A1 + D1 N=3	A1 +D2 N=2
Exposure Therapy (A2)	A2 + B1 N =3	A2 + B2 N= 9	A2 +C1 N =3	A2 + C2 N=3	A2 + D1 N =2	A2 + D2 N=4
Control	A3 + B1 N=2	A3 +B2 N=5	A3 +C1 N=2	A3 +C2 N=3	A3 +D1 N=2	A3+ D3 N=2

KEY

A1 Dialectical Behaviour Therapy

A2 Exposure Therapy

A3 Control Group

B1 Male with Dyslexia

B2 Female with Dyslexia

C1 Male with Dyscalculia

C2 Female with Dyscalculia

D1 Male with Dysgraphia

D2 Female with Dysgraphia

3.2 Population

The target population for the study comprised student with learning disabilities in Oyo State, Nigeria. Ogbomoso, being the second largest city in the state was used for the study to represent the target population. Three private schools were randomly selected out of a total number of 80 secondary schools within the city including 38 public and 42 private schools. Private schools were selected for the study to avoid the contaminating influence of environmental factors such as teachers' inefficiency and commitment, incessant strikes, poor learning environment, inadequate learning materials, poor socio-economic status of the parents to mention just a few, which are characteristic features of most of Nigerian public schools, in selecting the target population for the study.

3.3 Sample and Sampling Techniques

A purposive random sampling technique was adopted for the study. Three private secondary schools were randomly selected from secondary schools in Ogbomoso area of Oyo State. The schools are Gomal Baptist College, Jaff Comprehensive College and Ayegun Baptist Church College.

Purposive sampling technique was used to select the participants for the study using Pupils' Rating Scale to screen students with LD. A total number of 66 students with LD were drawn from the three schools used for the study. Simple random technique using cap ethod was used to group the schools into experimental and control groups. Ayegun Baptist Church College was used as control group. Gomal Baptist College served as experimental group 1 and Jaff Comprehensive College

served as experimental group 2. The distribution of participants by school, types of learning disability and gender is illustrated in the table below.

Table 3:2. DISTRIBUTION OF PARTICIPANTS BY SCHOOL, TYPES OF LEARNING DISABILITY AND GENDER.

	Dyslexia		Dyscalculia		Dysgraphia		Total.
School	Male	Female	Male	Female	Male	Female	
Gomal Baptist College	5	9	3	4	3	2	26
Jaff Comprehensive College	3	9	3	3	2	4	24
Ayegun Baptist Church College	2	5	2	3	2	2	16

3.4 Inclusion and Exclusion Criteria

The inclusion criteria for the study were;

- Students who scored below average (72) in the Pupils Rating Scale
- Students whose learning disabilities are not primarily as a result of vision, hearing, or motor deficit; emotional disturbance; mental retardation; environmental, economic or cultural disadvantages.
- Students with learning disabilities who scored 3.0 and above in Westside Test Anxiety Scale.
- Students who demonstrated a severe discrepancy between achievement and ability in reading, writing or mathematics
- Students who volunteered to participate in the exercise by signing the behavioural contact form which the researcher made available.

- Students whose parents allowed participating by filling the consent form.

3.5 Instruments.

The research instruments used for data collection for this research work include:

(i) Pupil Rating Scale (Revised)

(ii) Westside Test Anxiety Scale

(iii) Stanford Achievement Test Series Tenth Edition.

3.5.1 Pupil Rating Scale

The Pupil Rating Scale is a screening instrument developed by Mykleburst in 1971 and revised in 1981. It is a standardised, flexible instrument that is easily adaptable to any cultural background without any alteration. It has been proved to be very accurate in identifying children who have high risks of failing in school even in Nigeria, because the scale does not have discriminatory features.

Ikujuni (1995) and Kanu (2004) adapted this scale in screening children for learning disabilities and found it very useful and suitable.

The scale consists of five major behavioural characteristics which are:

- Auditory comprehension
- Spoken language
- Orientation
- Motor coordination
- Personal social behaviour

These behavioural characteristics are grouped under two categories, verbal and non-verbal, auditory comprehension and spoken languages were classified as verbal while orientation, motor coordination and personal social behaviour are classified as non-verbal. On the whole, the scale contains 24 items. Each item was assessed on a five point scale with an average of three. Rating which fell below the average, received either one or two scores while ratings above average received four or five scores. A score below the average result (72) would suggest the presence of learning disabilities in a child.

Ikujuni (1995) revalidated the research instrument on Nigerian population and recorded high construct validity and a test-re-test reliability coefficient of 0.86. Also,

Kanu (2004) conducted a pilot study in order to further ascertain its suitability for screening learning disabilities in children. There was a significant inter-item correlation with a coefficient alpha of 0.91. Also, a Spearman Brown split half showed reliability coefficient of 0.74.

3.5.2 Westside Test Anxiety Scale

The Westside Test Anxiety Scale developed by Driscoll (2004), is a brief ten item instrument designed to identify students with anxiety impairments who could benefit from an anxiety reduction. The scale items cover self-assessed anxiety impairment and cognitions which can impair performance.

The Westside Scale combines six items assessing impairment and four items on worry and dread. The scale uses a five point Likert Scale ranging from extremely always true, to not at all or never true. Participants are to tick their answers. A typical item is "The closer I am to a major examination, the harder it is for me to concentrate on the material". The scores of the participants are added and divided by ten and then interpreted thus:

1.0 – 1.9 - Comfortable low test anxiety
2.0 – 2.5 - Normal or average test anxiety
2.5 – 2.9 - High normal test anxiety
3.0 – 3.4 Moderate high test anxiety
3.5 – 3.9 High test anxiety
4.0 – 5.0 Extremely high test anxiety

Westside Scale obtain a correlation coefficient of r = .44 in two separate populations between changes on Westside Scale and changes in test performance (Driscoll, 2007).

3.5.3 Stanford Achievement Test Series (Tenth Edition)

Stanford Achievement Test Series (Tenth Edition) were developed by Pearson Assessment and Information (2008) to measure cognitive abilities that relates to a student's ability to learn and succeed in school. It is used to measure academic knowledge of elementary and secondary school students. The test is available in 13 levels that roughly correspond to the year in school. For the purpose of this study, Stanford Achievement Test for intermediate 2 (5th Grade) which is considered

appropriate for the age grade of the participants is used. The Reading and Mathematics subsets of the test were used

Reading and Comprehension

Stanford Achievement test (Reading) is a 25-item multiple choice questions designed to measure the spectrum of important reading components, from recognising sounds to word identification, from vocabulary skills to comprehension. The reading subtest reflects and supports a balanced, developmental curriculum and sound instructional practices. The subtest measure phonemic awareness, decoding, phonics, vocabulary and comprehension.

To further ascertain the reading ability of the participants, each of them was asked to read the first comprehension passage in the test. This is done with the complementary effort of the research assistants.

Writing

To test the writing ability of the participants, a two-paragraph comprehension passage was dictated to the participants in order to measure the legibility of their handwriting, the speed and accuracy as well as spelling.

Mathematics

Stanford 10 Mathematics subset is a ten-item multiple choice test which measures number sense and operation/patterns, relationships and algebra, geometry and measurement, and data, statistics and probability. Questions assessed processed in communication and representation, estimation, mathematical connections and reasoning and problem solving.

To test the cultural adaptability of the instrument to Nigerian situation, a pilot test was carried out among 25 students of Maryland Catholic Grammar School, Ogbomoso. The reliability coefficient was determined using Cronbach alpha and it read r =0.72. However, a further analysis of each subset showed a reliability coefficient of r=0.73 for Reading and comprehension subset, while r= 0.68 was recorded for mathematics subset. These suggest that the instrument is reliable and suitable for use among Nigerian students.

The scale is scored thus:

50% and above -------- High Academic Achievement

30% - 49% -------- Average Academic Achievement

29% and below -------- low Academic Achievement

The implication is that a score below 30% in a test indicates a suspect of disability in that specific area (either in reading, writing or mathematics).

3.6 Procedure for Treatment

The research procedure passed through three main stages. These include: The pre-treatment, treatment and post-treatment stages.

Pre-treatment Stage:

During the pre-treatment phase, the researcher:

- Collected letter of introduction from the Department of Guidance and Counselling, University of Ibadan.
- Visited and made himself familiar with the schools where the research will be carried out.
- Obtained the consent of the schools' authorities with the letter of introduction collected.
- Trained the research assistants who assisted in the treatment exercise.
- Established rapport with the counsellors and classroom teachers who helped in the screening of the participants.
- Established rapport with the participants.
- Administered questionnaires to the participants for the purpose of assessment.
- Gave orientation to the participants on the goals of the training, objectives, duration and importance of participating in the therapeutic programme.
- Got each participant committed to training by signing the behavioural contact form.
- Established the rule guiding the therapeutic session with the participants.

Treatment Stage

Each of the schools was exposed to a particular treatment programme either with Dialectical Behaviour Therapy or Exposure Therapy. Each experimental group was exposed to at least ten sessions of treatment. Each session lasted for one hour

with its stated objectives. The methods of delivery of training skills included: Lecture method, group discussion and role play.

Post -treatment Stage

The stage included the evaluation of the therapeutic session. It involved the administration of the research instruments to the participants to ascertain the effectiveness of the independent variables on the dependent variable.

Treatment Sessions

Experimental Group 1: Dialectical Behaviour Therapy

Session one: General Orientation

Session Two: Setting the Therapeutic Goals

Session Three: Test Anxiety: Meaning, Causes and Consequences

Session Four: Mindfulness Training

Session Five: Distress Tolerant Skill

Session Six: Crisis Survival Strategies

Session Seven: Emotions

Session Eight: Emotional Regulation

Session Nine: Interpersonal Effectiveness: Self-respect Effectiveness

Session Ten: Administration of Post Intervention Questionnaire and Termination of Therapy

Experimental Group 2: Exposure Therapy

Session one: General Orientation

Session Two: Setting the Therapeutic Goals

Session Three: Test Anxiety: Meaning, Causes and Consequences

Session Four: Behaviour Analysis and Goal Setting

Session Five: Muscle Relaxation Exercise

Session Six: Imaginal Exposure Training

Session Seven: Imaginal Exposure Training using Tape Recorder

Session Eight: In Vivo Exposure Training

Session Nine: Practical Demonstration of In Vivo Exposure Training

Session Ten: Administration of Post-intervention Questionnaire and Termination of Therapy

Control Group

Control group is a non-treatment group. They only participated in the pre-treatment and post-treatment sessions. However, they were compensated by undergoing training on test anxiety: meaning, causes and consequences; and study skills

3.7 Control of Extraneous Variables

Having the awareness of the fact that there are some extraneous variables such as experimenter's effect, selection bias, instrument habituation and statistical errors, which can hinder the true effects of independent variable upon the dependent variables, the researcher used the following measures to reduce such influence.

- Pupils Rating Scale and Stanford Achievement Test Series Tenth Edition were used for screening the participants for pre-selection to ascertain the homogeneity of participants.
- The venue used for the treatment and control were not nearby schools where the participants could easily suspect the purpose of the therapy.
- The purpose of the experiment was concealed from the participants. Moreover, the content of the programme was not discussed with non-member group.
- The instrument used at pre-treatment stage (Westside Test Anxiety Scale) was re-arranged during post-treatment assessment to forestall test-wiseness.

3.8 Data Analysis

Data gathered from administration of research instrument were subjected to statistical analysis using Analysis of Covariance (ANCOVA), Multiple Classification Analysis (MCA) and Scheffe Pair Wise Test to test the hypotheses at 0.05 level of significance.

ANCOVA has been discovered to be a robust statistical instrument for handling behavioural experimental studies especially to determine the effects of the independent variables on the dependent variables. It is equally believed to control and adjust treatment mean scores.

Multiple Classification Analysis and Scheffe Pair Wise Test are explored because they are believed to be relevant statistical instruments in establishing the differential effectiveness of independent variables.

CHAPTER FOUR

RESULTS

This chapter contains the results of the stated hypotheses. The results are displayed in tables. They are as presented in what follows:

4.1 Hypotheses Testing.

Hypothesis One: There will be no significant main effect of treatments on test anxiety of participants. In determining the effect of treatments and control on test anxiety of participants Table 4.1 is presented.

TABLE 4.1: SUMMARY OF POST-TEST TEST ANXIETY BY TREATMENT GENDER AND TYPES OF LEARNING DISABILITY

Source of Variance			Hierarchical Method				
			Sum of Square	df	Mean Square	F	Sig
POST TEST ANXIETY	COVARIATE	PRETEST ANXIETY	320.376	1	320.376	9.498	* 0.003
	Main Effects	Treatments	1432.247	2	716.123	21.230	* 0.000
		Gender	60.533	1	60.553	1.795	0.187
		Types of Learning Disability	28.883	2	14.441	0.428	0.654
	2-Way Interaction	Treatments X gender	73.438	2	36.719	1.089	0.345
		Treatments X Types of Learning Disability	252.316	4	62.079	1.870	0.131
		Gender X Types of Learning Disability	72.660	2	36.330	1.077	0.349
	3 Way Interaction	Treatments X gender X Types of Learning Disability	99.522	4	24.881	0.738	0.571
	Model		2291.694	18	127.316	3.774	0.000
	Residual		1585.396	47	33.732		
	Total		3877.091	65			

* Significant at P<0.05

Table 4.1 shows a significant effect of treatment on test anxiety level of participants {$F_{(2,47)}$ = 21.230; P = 0.003 < 0.05). This means that there is significant difference in the mean test anxiety score between participants in the DBT, Exposure Therapy and those in control group. Hence, hypothesis one is rejected.

To determine the degree of significance among the treatment groups, table 4. 2 is presented

Table 4.2: Multiple Classification Analysis of Post-test on test anxiety by treatment, type of disability and Gender

Grand Mean = 29.73

Variable + Category	N	Unadjusted Dev'n ETA		Adjusted for Independents + Covariates Dev'd	Beta
Treatment: 1 DBT	26	-4.15		-3.69	
2 ET	24	0.19		-1. 13	
3 Control	16	6. 46		7. 69	
			0.54		0. 59
Types of Disability Dyslexia	32	0.21		0. 26	
Dyscalculia	19	-1. 73		- 0.90	
Dysgraphia	15	1.73		0.58	
			0.16		0.08
Sex: Male	36	0. 97		0.95	
Female	40	-0. 63		-0. 62	
			0.10		0.10
Multiple R Squared 0.429 Multiple R 0. 655					

Table 4.2 reveals that the DBT group obtained the least adjusted post – test mean score in test – anxiety ($\bar{X}$ = 25. 58). This is followed by the Exposure Therapy group ($\bar{X}$ = 29. 92) while the highest mean score was obtained by the control group ($\bar{X}$ = 36. 19). To this end, the Dialectical Behaviour Therapy was more effective in reducing test anxiety than the Exposure Therapy and control groups respectively.

The factor summary table displays the correlation efficient of 0. 655 and multiple R – squared of 0. 429 from a regression that include covariates in addition to the factors. This accounted for 42. 9% of the total variance.

To further test the source of the significant effect of treatment on test – anxiety, the Scheffe post hoc test was carried out. The summary of the result is presented in Table 4.3

To determine the degree of significance among the treatment groups, Table 4.3 is presented.

TABLE 4:3 SCHEFFE POST HOC TEST ON TEST ANXIETY OF PARTICPANTS

Treatment	N	X	DBT	EXPOSURE THERAPY	CONTROL
DBT	26	25.5769		*	*
EXPOSURE THERAPY	24	29.9167	*		*
CONTROL	16	36.1875	*	*	

* Pairs of groups significantly different at P<0.05

From Table 4.3, all the three possible pairs are significantly different at α = 0.05. Specifically, there is a significant difference between pairs of:

(1) DBT and Exposure Therapy

(2) DBT and Control

(3) Exposure Therapy and control

Therefore, all the three pairs contributed to the significant effect observed for treatment on test anxiety of participants.

Hypothesis Two: There will be no significant main effect of types of learning disability on test anxiety of participants.

Table 4.1 shows that types of learning disability have no significant effect on the test anxiety of participants ($F_{2,47}$ = 0.428; P>0.05). This means there is no significant difference in the test anxiety level of participants with dyslexia, dyscalculia and dysgraphia levels of learning disabilities. Hypothesis two is therefore not rejected.

Hypothesis Three: There will be no significant main effect of gender on test anxiety of participants.

Table 4.1 shows that gender has no significant effect on participants' test anxiety ($F_{1,47}$ = 1.795; P>0.05). This means that the male and female participants' test anxiety level do not differ significantly. Hence hypothesis three is accepted.

Hypothesis Four: There will be no significant interaction effect of treatments and gender on test anxiety of participants.

Table 4.1 shows that the two-way interaction effect of treatment and gender on test anxiety is not significant ($F_{(2,47)}$ = 1.089; P>0.05). On the basis of this, hypothesis four is not rejected.

Hypothesis Five: There will be no significant interaction effect of treatment and types of learning disability on test anxiety of participants.

From Table 4.1, the 2-way interaction effect of treatment and types of learning disability on participants' test anxiety is not significant. ($F_{(4,47)}$ = 1.870; P>0.05). Hence, the null hypothesis five is accepted.

Hypothesis Six: There will be no interaction effect of gender and types of learning disability on test anxiety of participants.

Table 4.1 shows that there is no significant interaction effect of gender and types of learning disability ($F_{(2, 47)}$ = 1.077; P>0.05). Hence, hypothesis six is confirmed.

Hypothesis Seven: There will be no significant interaction effect of treatments, gender and types of learning disability on test anxiety of participants.

Table 4.1 shows that there is no significant 3-way interaction effect of treatment, gender and types of learning disability on test anxiety of participants. ($F_{(4, 47)}$ = 0.738; P>0.05). Hypothesis seven is therefore accepted.

4.2 Summary of Findings

The findings of this study could be summarised as follows:

1. There is significant main effect of treatments on test anxiety of participants. Specifically,
   (i) There is significant difference between the test anxiety of participants exposed to dialectical behaviour therapy and those exposed to exposure therapy.
   (ii) There is a significant difference between the test anxiety level of participants exposed to DBT and those in control group.
   (iii) There is significant difference between the test anxiety level of participants exposed to ET and those in control group.
2. There is no significant main effect of types of learning disability on test anxiety of the participants.
3. There is no significant main effect of gender on test anxiety of the participants.
4. There is no significant interaction effect of treatment and gender on test anxiety of the participants.
5. There is no significant interaction effect of treatment and types of learning disability on test anxiety of participations.
6. There is no significant interaction effect of gender and types of learning disability on test anxiety of the participants.
7. There is no significant interaction effect of treatment, gender and types of learning disability on test anxiety of the participants.

CHAPTER FIVE
DISCUSSION OF FINDINGS, CONCLUSION, IMPLICATION AND RECOMMENDATIONS

This chapter focuses on the discussion of the findings of the seven hypotheses that were tested at 0.05 level of significance. The findings of this study were lucidly compared with the results and observations of previous related studies. In addition, the implications of the study for clinical and counselling psychologists, generalisation of findings, limitations and peculiarities of the study; suggestions for further studies, conclusion as well as recommendations were stated in the chapter.

5. 1 Discussion

The effectiveness of two therapeutic techniques (Dialectical Behaviour and Exposure Therapies) in the treatment of test anxiety among students with learning disabilities in Oyo State, Nigeria was examined in this study. The results of the study were therefore discussed one hypothesis after the other, based on the scores of the participants on the measure of test anxiety. The findings were discussed as stated in what follows.

Hypothesis One

The first hypothesis which states that there will be no significant main effect of treatments on test anxiety of participants was rejected.

Going by the results presented in Tables 4:1, 4:2 and 4:3 it could be deduced that there was a significant difference between the test anxiety scores of participants exposed to treatments and the control group ($F_{(2, 47)} = 21.230$; $P = 0.003 < 0.05$). The participants in the control group scored significantly higher on the measure of test anxiety than their counterparts in the treatment groups indicating a significant difference. The two therapies (DBT and ET) were therefore more effective in reducing the test anxiety level of the participants than the control group.

The finding should not be unexpected as anxiety is one of the attributes of borderline personality disorder which DBT is primarily designed for. The finding is therefore in consonance with the earlier empirical results of DBT which indicate that the therapy is an effective treatment. For instance, Koons et al (2001) found participants in DBT to experience less suicidal ideation, depression, hopelessness and

anger than those in the comparison group. Also, Turner (2000) observes that DBT is effective in managing cases of depression, impulsiveness, anger and global psychological functions. In a related finding Low et al (2001) discovered DBT to decrease self-harm, dissociative experiences, depressive symptoms, suicidal ideation and impulsivity. Above all, Linehan et al (1999) while comparing client receiving DBT with those on treatment as usual (TAU) or non – treatment groups found participants receiving DBT to less likely drop out of therapy, less likely to engage in para – suicide, show fewer para – suicidal behaviours and had less medically severe behaviours when engaging in parasuicidal behaviors.

The possible explanation for the effectiveness of DBT in reduction of test anxiety among people with learning disabilities could be that it lays much emphasis on distress tolerance which have to do with the ability to accept in a non-evaluative and non- judgmental fashion, both oneself and the current situation although this might not suggest the approval of such behaviour. Going by Linehan's (1993 a) theory of development of BPD, invalidating environment which is characterised by parents' inappropriate, unpredictable or extreme responses when a child communicates his or her experiences is seen as a primary factor of distress. Hence, blaming people with learning disabilities over the behaviours which have biological basis by parents, teachers and peers might be devastating and generate high rate of tension. However, exposure of the participants to DBT through which they are made to see their problems as no fault of theirs while also offering them the possibility of taking responsibility for future change might have contributed significantly to the reduction of their test anxiety. Consequent upon this, the participants can be more proficient in tolerating difficult situations and in functioning while they still felt emotional distress.

Similarly, the effectiveness of exposure therapy over the control group in the reduction of test anxiety among the participants for this study is not strange as it has been established to be easy to learn and suitable for use in general practice. Chambless and Gillis (1993) and Sheehan and Lecrubier (1997) opine that it is effective in the treatment of social phobia. The study therefore concurred with the findings of Keane and Kaloupek (1982) and Keane, Fairbank, Caddell, Zimering (1989), who found exposure therapy to be effective in reducing many of the veteran's post traumatic stress disorders which include nightmares, flashbacks, memory and concentration problems and irritability. One other peculiar discovery of this study is

also that exposure therapy alone rather than combining it with other therapies like Cognitive Behaviour Therapy (CBT) is potent enough to reduce anxiety. The finding supports the findings of Foa et al (1999), Marks et al (1998), and Foa and Rauch (2004) who found that combining CBT with exposure therapy does not have advantage over exposure therapy alone for PTSD.

The reason for the effectiveness of this therapy (Exposure therapy) in the management of test anxiety could be explained in line with the theory of stimulus estimation of match – mismatch which hypothesised that exposure therapy presumably provides corrective evidence in that participants see that reality is not as bad as their expectations. Hence, constant exposure to testing situation and objects of anxiety in a relaxed atmosphere may lead to habituation and tendency to eliminate severe emotional response to trauma associated with testing. This, according to Foa and Kozak (1984) is capable of providing opportunity for the individuals to organise their beliefs and perceptions of the trauma in a manner that restores feelings of competence and promotes a realistic and manageable view on environmental threat. One other explanation could go along the proposition of Bandura (1986) that repeated exposure to successful testing experiences for students with high anxiety would promote self-efficacy for later test. This of course have the potential of decreasing the anxiety level of individuals.

Comparing the effectiveness of the two therapies, it could be deduced from Tables 4:2 and 4:3 that the mean score of participants in DBT (25.58) is lower than the mean score of participants in ET (29.92), indicating a significant difference in the test anxiety scores of the participants in the two therapies. DBT is therefore found to be more effective than ET in the management of test anxiety. The finding supports a similar study of Goldfried et al (1978), who used systematic rational restructuring and prolong exposure therapy for reducing test anxiety in a sample of 36 University students and found rational restructuring to be more effective in reducing test anxiety followed by prolonged ET.

The reason for the effectiveness of DBT over ET is not farfetched. Although ET has been suggested to be easily learnt and may not be highly clinical, individuated and metaphorical like DBT as suggested by Ogundayo (2007), exposure to real objects of fear and anxiety may be frightening at the initial stage and generate more tension before the actual habituation could take place. Hence, more time may be needed in ET. Also, while ET lays much emphasis on reliving in the experience that

constitute threat to the clients as a way of overcoming one's traumatic experience, DBT, on the other hand, stresses the need to confront the situation with opposing thoughts to that which brings anxiety. The latter may be much more appealing and convenient to the participants.

Hypothesis Two

The second hypothesis tested in this study states that there will be no significant main effect of learning disabilities on the level of test anxiety of the participants. The hypothesis was accepted because the result in Table 4:1 reveals that nature of learning disabilities has no significant effect on the level of test anxiety of the participants after exposure to the two therapies. This means, the participants with dyslexia, dyscalculia and dysgraphia equally benefited from the two therapies.

The reason that could be adduced to this lack of moderating effects of types of learning disabilities on the therapies could be that regardless of the nature and type of learning disabilities, the resultant effect of the cognitive impairment is usually academic underachievement which results in test anxiety. The two therapies, DBT and ET, are potent and comprehensive enough to assist the participants cope with their level of anxiety through the principles of validation and habituation respectively. Hence, the treatment programmes had equal strength and effect on the participants of the two groups irrespective of types of learning disabilities. By implication, it could be inferred that while determining the effectiveness of the two therapies on management of test anxiety, the nature of learning disabilities is not a factor.

Hypothesis Three

The third hypothesis which states that there will be no significant main effect of gender on test anxiety level of participants is also accepted as Table 4:1 shows that gender has no significant effect on participants' test anxiety level ($F_{(1, 47)} = 1.795$; $P > 0.05$).

The outcome of this study seems to negate the findings of Sipos et al (1986), Smith et al (1990), Spielberger (1980) whose studies revealed the moderating role of gender in test anxiety relations. To these researchers, relationship between test anxiety and test performance was stronger for male than for females and the reason adduced for this difference in test anxiety among male and female was attributed to the coping style. According to McCarthy and Goffin (2005), females' reactions to

stress and anxiety are both qualitatively and quantitatively different from those of males as they are prone to demonstrate a stronger tendency to regulate stressful emotions than their male counterparts. One thing that is worthy of notice from the findings of earlier researchers stated above is that their moderating effect of gender focuses on correlation between test anxiety and performance. Also, the coping style which females were said to demonstrate are self- induced such as attendance of test preparation (Ryan et al, 1998). Hence, the lack of main effect of gender in test anxiety reduction of participants in this study could be traced to the fact that both male and female participants were exposed to similar coping strategies that are strong enough in the management of test anxiety among the target population. The indication is that the participants from the two therapies irrespective of their gender diversity gained equally from the therapeutic procedures. The study finds no moderating effect of gender on test anxiety of the participants in relation to DBT and ET as management strategies.

The study therefore supports the findings of D' Ailly and Bergering (1992), Everson, Rodriguez and Mwamwenda (1993) who found that males and females experienced no significant differences in general test anxiety.

Hypothesis Four

Going by the fourth hypothesis which predicts no significant interaction effect of treatments and gender on test anxiety of participants, the result shown on Table 4:1 demonstrates that the two-way interaction effect of treatment and gender is not significant ($F_{(2, 47)} = 1.089$; $P > 0.05$) and as a result, the hypothesis could not be rejected. The deduction from this finding is that the interaction between gender and the treatments (DBT and ET) could not hinder the potency of the treatments on test anxiety of participants and as such, the participants, regardless of the perceived influence of gender on the therapies, could equally utilize and benefit from the treatment packages on equal basis. The finding is in consonance with the earlier findings of Spoont, sayer, Thuras, Erbes and Winshn (2003), Bremner, Southwick, Johnson, Yehuda and Charney (1993) and Ogundayo (2007). They all found no gender differences in the perceived benefit or satisfaction with DBT.

Hypothesis Five

This hypothesis states that there will be no significant interaction effect of interventions and types of learning disability on test anxiety of participants. The result presented in Table 4:1 shows that the two-way interaction effect of treatment and types of learning disability on participants' test anxiety is not significant ($F_{(4, 47)} = 1.870$; $P > 0.05$). The hypothesis is therefore sustained.

What could have been the major interaction effect of interventions (DBT and ET) and learning disabilities on the dependent variable is assumed to be the comprehensibility of the treatment packages. However, since the participants have been noted to have IQ that is average or above average (Winter, 1993, Rutherfird et al. 1986) and the therapeutic process does not require much of writing, reading and doing mathematical calculations with which the participants have problem. The comprehension of the treatment packages could not have generated any problem.

Moreover, the methods used in the delivery of the therapeutic sessions such as role play, communication redundancy (planned repetition,) discussion, demonstration and the use of acronym could have fascinated the interest and understandings of the participants and as such there could not have been interaction effect of types of learning disability and interventions on the outcome of the therapeutic process.

Hypothesis Six

There will be no significant interaction effect of gender and types of learning disabilities on test anxiety of the participants. The result in Table 4:1 shows that there is no statistically significant interaction effect of gender and types of learning disability on test anxiety reduction of participants ($F_{(2, 47)}$, = 1.077; $P > 0.05$) The result of this study is contrary to the earlier findings of Bandian (1999), Smith (2004) and Liederman et al (2005) who found gender differences exist in people with learning disability. It should however be noted that the focus of earlier researchers on influence of gender on learning disabilities is always in terms of prevalence as regards the ratio of boys to girls, not in terms of their behavioural response to treatment and degree of severity in affected individuals.

The deduction from this finding is that regardless of gender differences in learning disability in terms of ratio, the differences are not potent enough to negatively influence the participants' response to treatment and as such could not be regarded as a factor while using the two therapies (DBT and ET) in the management

of test anxiety. The participants will benefit equally from the treatment regardless of gender differences in learning disability.

The finding concurs with those of Share and Silva (2003) and Bandian (1999) who observe that by research criteria, there are no gender differences in learning disability.

Hypothesis Seven

The last hypothesis states that there will be no significant interaction effect of treatments, gender and types of learning disability on test anxiety of participants. The result presented in Table 4:1 shows that there is no significant interaction effect of treatment, gender and types of learning disability on test anxiety level of participants ($F_{(4, 47)} = 0.738$; $P > 0.05$).

The result of this study should not be surprising since it has been noted from the previous hypotheses that the treatments given to the experimental groups were effective regardless of gender, learning disability type and interventions. The implication and possible reason that could be adduced for this finding is that the two experimental groups are of equal personality determinants and more importantly, the treatments have equal strength and effect on the participants of the two groups. As a result they produced similar result.

5.2 Conclusion

This study determined the effectiveness of DBT and ET in reducing test anxiety among students with learning disabilities. The position of the study is that the two therapies were effective in treating test anxiety among the target population. The study also revealed the superiority of DBT over exposure therapeutic technique. The potency of the therapies was however not mediated either by gender or the type of learning disabilities.

The conclusion that could therefore be made from the study is that although learning disabilities may not be transient and be difficult to treat, behaviour disorders that co-occurred with it such as test anxiety could be well-handled through the use of dialectical behaviour and exposure therapies without being gender bias and regardless of the nature of learning disabilities.

5.3 Implication of the Findings

There are several implications which could be derived from the findings of this study both in clinical and counselling settings. Obviously, the findings reveal that the two therapies (DBT and ET) are effective therapeutic techniques in the reduction of test anxiety among people with learning disability.

The study reveals that test anxiety among this target population could be well-managed and reduced to a level in which the affected individuals can cope. Accordingly, the two therapeutic intervention techniques used in this study are found to be effective and useful in the reduction of test anxiety among people with learning disabilities. This could by extension improve their academic performance as well as general daily living.

The implication of this study to clinical practice is that the clinical practitioners, such as clinical, counselling and educational psychologists among other stakeholders could replicate this study and adopt these therapies to manage test anxiety and similar behavioural problems of people with learning disabilities. Consequently, clinical practitioners need to broaden their knowledge, acquire more training and get familiar with the two therapeutic interventions used in this study as well as other new psychotherapies whose efficacy within Nigerian cultural context in the management of test anxiety are established. This is because; in as much as examination continues to be the measure of students' ability, anxiety about testing will continue to be a problem.

The result of this study has further strengthened the fact that although learning disabilities may not be transient and may run through life, the cognitive impairment could be well managed and behaviours that co-occurred with learning disabilities could be treated. The study therefore implies that, students with learning disabilities who are frustrated and contemplating dropping out of school as a result of test anxiety and persistent failure could be helped using these therapies. The affected students could therefore be referred to the clinical practitioners who have been equipped with the techniques of these interventions. This in turn will help the affected people contribute their parts to national development and maximise their potentials to live meaningful lives rather than dropping out of school and constituting miscreants to the society.

The outcome of this study is also of great importance to the parents who as a result of huge amount of money they pay, time and energy they exert in educating

their children with learning disabilities may get frustrated and decide to withdraw their children from school due to their discouraging performance. This study has demonstrated that parents could assist their children in seeking the help of therapists. The effectiveness of the two therapies (DBT and ET) in reducing test anxiety of the students with learning disabilities may lead to improved academic performance which could in turn lead to alleviation of the burden of both parents and students.

The outcome of this study is expected to be useful to the teachers who are often blamed for the academic deficiency of their students. Since, the examination of students is to a large extent dependent on teachers, they are under obligation to make students with test anxiety confront examinations in a relaxed atmosphere. This study has therefore offered the concerned teachers effective tools for helping their learners to write examination without much rancor, they could make use of the principles of the two therapies used in this study to help their children overcome test anxiety. For instance, the principles of exposure therapy could be used by teachers through helping their students confront examinations constantly in a relaxed atmosphere and providing adequate feedback with words of encouragement. The two therapies therefore serve as tools for teachers to enhance academic performance of their learners.

Nigerian government, policy makers and educational administrators could also make use of the study to achieve their goals of Universal Basic Educations which mainly aimed at getting every child educated at least to Junior Secondary Three level. Among many other reasons, many students are frustrated out of school due to academic difficulties and examination anxiety. The policy makers, as well as the government, could therefore adapt the principles of the therapeutic interventions used in this study to formulate policies which can decrease examinations tension among students; thereby increasing their interest in schooling and reducing their dropout rate. The study has served as an eye opener to the government on the need to employ more clinical practitioners in schools who will use their psychological prowess to assist the learners on their emotional problems.

5.4 Peculiarities of the Study

This study has in no doubt made its contributions to the body of knowledge in diverse ways among which are:

Despite the availability of considerable number of studies on test anxiety among the general populace, availability of such study among people with learning

disabilities is rare in Nigeria. This study is therefore believed to be among the few, to the best of the knowledge of the researcher, to study test anxiety among this population locally and as a result it is a veritable background to further studies.

Additionally, to the best of the researcher's knowledge, there is no single research in the field of clinical and counselling psychology in Nigeria that has ever used the two therapies as a combination of therapies in the treatment of test anxiety especially among students with learning disabilities. This assumption could be linked with the evidence of scarcity of local literature relating to the therapies in Nigeria.

Another noticeable contribution of this study to knowledge is the discovery that DBT is more effective in the treatment of test anxiety than ET. Since no study, is assumed to have combined the two therapies in the management of test anxiety, it gives the therapists clue on which of the two therapies could best be used while handling students with examination anxiety.

One other peculiarity of this study is the use of the three types of learning disability as moderating variable. Most of the previous studies in learning disabilities and test anxiety used the level of cognitive distortion and test anxiety among others. The three types of learning disabilities as identified by NJCLD and DSMIV are usually not focused. This study therefore breaks ground that students with learning disabilities can be identified based on their types of LD and used as moderating variable in empirical studies.

5.5 Limitations of the Study

This study is however not without limitations. The first of such observed limitation lies in the relatively small sample size used. The sample consisted of 66 students with learning disabilities. This is due to several factors such as administrative, logistic reasons as well as difficulties encountered in screening the participants. This will arguably limit the generalisability of the result. However, the significant results in Table 4:1 indicate that statistical power is not a serious concern in several instances.

Also, the sample used comprised only students from private schools; public school students were not among the randomly selected participants. It is assumed that larger number of people with learning disabilities could be found in public schools. They are however excluded to avoid the contaminating influence of some environmental factors while screening the participants.

As could be expected, majority of the participants could not read and comprehend the language with which the psychological scales used are written (English language). Each item had to be read and explained to them before they could respond to the items.

Further, studies on test anxiety among people with learning disabilities, as well as the treatment strategies (DBT and ET) are rare. This has limited the extent to which literature is reviewed especially from indigenous researchers and the richness of the discussion of the findings of the study.

Despite all the limitations, the results of this study could not be invalidated as generalisation could still be made.

5.6 Recommendations

This study shows that the two therapies (DBT and ET) employed for the management of test anxiety among people with learning disabilities for the study are effective. Consequent upon the outcomes of the study, the following recommendations are made.

1. In as much as testing will continue to be a measure through which scholastic achievement of learners is ascertained, there will continue to be the debilitating effect of test anxiety which may in turn invalidate the veracity of students' actual ability especially among students with cognitive impairment. It therefore becomes necessary for clinical and counselling psychologists as well as other mental health professionals to look for new therapies which can make students cope with their test phobia. The two therapies used in this study, that is, dialectical behaviour and exposure therapies are therefore recommended for treatments of test anxiety.
2. Due to the relative newness of the two therapies, especially in Nigeria and their complex nature, especially, DBT there is need for in-service training for behaviour change agents on the effective use of the therapies. Also, the therapies should be included among behavior modification strategies with which Nigerian psychologists – in – training are trained in Universities to afford them the opportunity to be well grounded in the effective use of these therapies.
3. The government should set up a body which will be responsible for proper identification of people with learning disabilities as well as taking care of their

educational and psychological needs. Mental health practitioners such as clinical and counselling psychologists should be included. The government should ensure that no child is left behind when it comes to education.

4. Teachers should assist in identifying and referral of students with learning disabilities suffering from test anxiety for appropriate interventions. Teachers should also make the appropriate use of continuous assessment in order to reduce examination anxiety among people with cognitive impairment (learning disabilities). Test should be given often and feedback promptly without the use of derogatory remarks on the underachieving participants. This will make taking test become the habit of the participants.
5. Parents should also provide an enabling environment that provokes positive thinking for people with learning disabilities. Good nutrition, appealing physical environments and encouraging music can encourage frustrated students and make them stop thinking negatively. Parents should equally be enlightened about the nature of people with learning disabilities so that behaviours that can provoke anxiety among adolescents with LD would be avoided.
6. In the process of using the two therapies for the management of test anxiety among students with learning disabilities, parents should be involved. They should be encouraged to assist their children to do the home assignments which would be given from time to time by the therapist. Hence, partnership between therapists and parents before, during and after therapeutic process is recommended with the therapist enlightening the parents on what they (parents) are expected to do.

5.7 Suggestions for Further Research

Despite the perceived uniqueness of this study, it is undeniable that it has not covered all aspects of behavioural problems among students with learning disabilities. There is therefore the need for further studies on areas yet to be touched in this study.

This study was carried out among students of private schools and among students from Junior Secondary School. The outcome of this study will be more valid if other researchers could replicate the study among public school students as well as among students from Senior Secondary School.

Also, this study was conducted to treat test anxiety among people with learning disabilities using DBT and ET. The effect of this reduced test anxiety on the academic achievement which is the major problem of students with learning disabilities is not determined. Other researchers could focus on this.

In addition, the two therapies used in this study are relatively new in Nigeria. Other researchers can also look for other related areas where their usage could be made possible in solving diverse behavioural problem of man especially people with learning disabilities.

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APPENDIX A
THE PUPIL RATING SCALE REVISED
Screening for learning disabilities

PUPIL'S NAME _____ SEX_____DATE_____
Year Month Day

RESIDENCE_____BORN_____
Year Month Day

PARENTS_____AGE_____
Year Month Day

SCHOOL_____

TEACHER_____GRADE_____

SUMMARY OF SCORES

AUDITORY COMPREHENSION_____VERBAL SCORE_____

SPOKEN LANGUAGE_____

MOTOR COORDINATION_____

PERSONAL SOCIAL BEHAVIOUR_____ NON VERBAL SCORE___

TOTAL SCALE SCORE_____

INSTRUCTIONS

Some children have deficits in learning which distinguish them from others in their class. The pupil rating Scale was developed so that these children can be more readily indentified.

The scale consists of five behavioral characteristics. I. Auditory Comprehensive and Memory; II. Spoken Language; III. Orientation; IV. Motor Coordination; and V. Personal Social behaviour.

Rate each child on these five characteristics. Make your ratings on a five point scale. A rating of 3 is average. Ratings of 1or2 are below average. Ratings of 4or 5 are above average. A rating of 1 is the lowest and a rating of 5 is the highest that can be given. Indicate your rating by circling the number that represents your judgment of the child's level of function. When making your evaluation, rate only one area of behaviour at a time, bearing in mind that a child might be functioning well in some respects but not in others.

The primary purpose for using the Pupil Rating Scale is to identify children who have learning disabilities. It is not intended that it serve as an indicator of inferior potential or lack of opportunity for learning. It is important that you make your ratings only on the basis of the items on this scale without concern for their factors.

For your ratings to be as discriminating as possible, you should have extensive opportunity for observing each child before making your judgments. Also, study the definition of the items given in the Manual. Your ratings are of considerable value. They serve as the initial screening so children who need further assessment can be identified.

Rate This Child on These Behavioral Characteristics

I. AUDITORY COMPREHENSION AND MEMORY

COMPREHENDING WORD MEANINGS

	RATING
Extremely immature level of understanding	1
Fails to grasp simple word meanings, misunderstands words at grade level	2
Good grasp of vocabulary for age and grade	3
Understanding all grade level vocabulary as well as higher level word meanings	4
Superior understanding vocabulary; understands many abstract words	5

FOLLOWING INSTRUCTIONS

Unable to follow instructions; always confused	1
Usually follows simple instructions but often needs individual help	2
Follows instruction that are familiar and not complex	3
Remembers and follows extended instructions	4
Unusual skillful in remembering and following instructions	5

COMPREHENDING CLASS DISCUSSIONS

Unable to follow and understand class discussions; always inattentive	1
Listen but rarely understands well, mind often wanders	2
Listens and follows discussions according to age and grade	3
Understands well; benefits from discussions	4
Becomes involved; shows unusual understanding of material	5

RETAINING INFORMATION

Almost total lack of recall; poor memory	1
Retains simple ideas and procedures if repeated	2
Average retention of materials; adequate memory for age and grade	3
Remembers information from various sources; good immediate and delayed recall	4
Superior memory for details and content	5

SCORE_____

II. **SPOKEN LANGUAGE**

VOCABULARY	**RATING**
Always uses immature, poor vocabulary	1
Limited vocabulary, primary simple hours; few precise descriptive words	2
Adequate vocabulary for age and grade	3
Above-average vocabulary; uses numerous, precise, descriptive words	4
High-level vocabulary; always uses precise words; conveys abstraction	5
GRAMMAR	
Always uses incomplete sentences with grammatical errors	1
Frequently uses incomplete sentences; numerous grammatical errors	2
Uses and correct grammar; few errors in use of prepositions, verb, tense and pronouns	3
Above average oral language; rarely makes grammatical errors	4
Always speaks in grammatically correct sentences	5
WORD RECALL	
Unable to recall the exact word	1
Often gropes for word to express himself or herself	2
Occasinally searches for correct word; recall adequate for age and grade	3
Above average; rarely hesistate on a word	4
Always speaks well; never hesitate or substitues	5
STORY TELLING- RELATING EXPERIENCES	
Unable to tell a comprehesible story	1
Difficulty relating ideas in a logical asequence	2
Average; adequate for age and grade	3
Above average; adequate for age an grade	4
Exceptional relates ideas in a logical, meaninful manner	5
EXPRESSION OF IDEAS	
Unable to relate isolated facts	1
Diffuculty relating isolated facts; incomplete and scattered ideas	2
Usually relates facts meaningfully; relates facts adequately for age and grade	3
Above average; relates facts and ideas well	4
Outstanding; always relates facts appropriately	5

SCORE_____

III. **ORIENTATION**

JUDGING TIME

	RATING
Lacks grasp of meaning of time, always late confused	1
Fair time concept; tends to dawdle; often late	2
Average time judgements; adequate for age and grade	3
Prompt; late only with good reason	4
Skillful in handling schedules; plans and organises well	5
SPATIAL ORIENTATION	
Always confused; unable to navigate around school, playground or neighborhood	1
Frequently gets lost in relatively familiar surroundings	2
Can maneuver in familiar locations; average ability for age and grade	3
Above average; rarely lost or confused	4
Adapts to new situations and locations; never lost	5
JUDGING RELATIONSHIPS (Big little, far-close, heavy-light)	
Judgements always inadequate	1
Makes elementary judgements successfully	2
Average judgements for age and grade	3
Accurate but does not genealize to new situations	4
Unusually precise judgements; generalise to new situations and expriences	5
KNOWING DIRECTIONS	
Highly confused, unable to distinguish right-left, north-south, east-west	1
Sometimes exhibits confusion	2
Average, uses right-left, north-south, east-west	3
Good sense of direction seldom confused	4
Excellents sense of direction	5

SCORE_____

IV. **MOTOR COORDINATION**

GENERAL COORDINATION (walking, runnung, hopping, slimbling)	**RATING**
Very poorly coordinated; clumsy	1
Below average; awkward	2
Average for age; graceful	3
Average for age; does well in motor activities	4
Excels in coordination	5
BALANCE	
Very poor balance	1
Below-average ability, fails frequently	2
Avearge ability for age adeqate equilibrum	3
Above average ability in activities requiring balance	4
Excels in balance	5
MANUAL DEXTERITY	
Very poor in manual dexterity	1
Awkward, below aveage in dexterity	2
Adequate dexterity for age, manipulates well	3
Above-average dexterity	4
Excels; readily manipulates new equipment	5

SCORE_____

V. PERSONAL SOCIAL BEHAVIOUR

COOPERATION	**RATING**
Continually disrupts classroom; unable to inhibit response	1
Frequently demands attention; often speaks out of turn	2
Waits his/her turn; aveage for age and grade	3
Above average; cooperates without adult encouragement	4
Excellent ability; cooperates without adult encouragement	5
ATTENTION	
Never attentive; very distactible	1
Rarely listens; attentive frequently wanders	2
Attention adequate for age and grade	3
Above average in attention, almost always attends	4
Always attends to important aspects; long attention span	5
ORGANIZATION	
Highly disorganizes; very slovely	1
Often disorganizes in manner of working; inexact, careless	2
Maintains average organization of work, careful	3
Above average organization, organizes an completes work	4
Highly organized, completes assingments in meticulous manner	5
NEW SITUATIONS (parties, trips, changes in routine)	RATING
Becomes extermely excitable, totally tacking in self control	1
Often overreacts; find new situations distrubing	2
Adapts adequately for age and grade	3
Adapts easily and quickly with self confidence	4
Excellent adaptation show initiative and independence	5
SOCIAL ACCPETANCE	
Avoided by others	1
Tolerated by others	2
Liked by others, average for age and grade	3
Well liked by others	4
Sought by others	5

RESPONSIBILITY

Rejects responsibility; never initiates activities	1
Avoids responsibility; limited acceptance of role for age	2
Accepts responsibility; adequate for age and grade	3
Above average in responsibility, enjoys responsibility; initiates and volunteers	4
Seeks resonsibility, almost always takes initiative with enthusiasm	5

COMPLETION OF ASSIGNMENTS

Never finishes even with guidiance	1
Seldom finishes even with guidance	2
Average performance; follows through on assingments	3
Above average performance, completes assingments without urging	4
Always completes assingments without supervision	5

TACTFULNESS

Always rude	1
Usually disregards feelings of others	2
Average tact; behaviour occasionally inappropraite socially	3
Always tactful; behaviour never socially inappropriate	4
Always tactful; behaviour never socially inappropriate	5

SCORE_____

APPENDIX B

WESTSIDE TEXT ANXIETY SCALE

NAME:_____

SCHOOL:_____

CLASS:_____

PARENT EDUCATIOAL BACKGROUND

PRIMARY EDUCATION ( )

SECONDARY EDUCATION ( )

GRADE II ( )

OND ( )

HND ( )

NCE ( )

UNIVERSITY DEGREE ( )

MASTER AND ABOVE ( )

TYPES OF SCHOOL (A) PUBLIC SCHOOL ( ) (B) PRIVATE SCHOOL ( )

SEX: (A) MALE ( ) (B) FEMALE ( )

DEPARTMENT: (A) SCIENCE ( ) (B) ARTS ( ) (C) COMMERCIAL ( )

SECTION B

Dear respondent,

One of the factors responsible for students' failure in examinations is test anxiety (exam fever). The following questions are designed to know your level of test anxiety and to help you reduce them to the barest minimum. Kindly respond honestly to each item as it appeals to you

Rate how true each of the following is of you, from **extremely** or **always true**, to **not at all** or **never true.**

Use the following 5 point scale. Circle your answers.

5	4	3	2	1
Extremely	highly	moderately	slightly	not
at all or				
Always	usually	sometimes	seldom	never
True	true	true	true	true

1) The closer I am to a major exam, the harder it is for me to concentrate on the material

5 4 3 2 1

2) When I study for my exam. I worry that I will not remember the material on the exam

5 4 3 2 1

3) During important exams, I think that I am doing awful or that I may fail

5 4 3 2 1

4) I lose focus on important exams, and I cannot remember material that I knew before the exam

5 4 3 2 1

5) I finally remember the answer to exam questions after the exam is already over

5 4 3 2 1

6) I worry so much before a major exam that I am too worn out to do my best on the exam

5 4 3 2 1

7) I fell out of sorts or not really myself when I take important exams

5 4 3 2 1

8) I find that my mind sometimes wanders when I am taking important exams

5 4 3 2 1

9) After an exam, I worry about whether I did well enough

5 4 3 2 1

10) I struggle with written assignments, or avoid doing them, because I feel that whatever I do will not be good enough. I want it to be perfect

5 4 3 2

APPENDIX C

Check list for writing errors.

S/N	Type of errors	Frequency of errors
1	No space between words	
2	Missed out a letter ('went as 'wet')	
3	Substituted a letter	
4	Inversion b/d, m/w,	
5	Reversals e.g. 'saw' as 'was'	
6	Added letter	
7	Wrong capitals	
8	Shortening of a letter ('sunly' for 'suddenly')	
9	Wrong order ('fet' as 'left')	
10	Others – punctuation, spelling mistakes	
11	No uniformity in size	

Total number of errors =

Time taken =

Remarks =

APPENDIX D

THE TREATMENT PACKAGES

Experimental Group I (Dialectical Behaviour Therapy)

SESSION ONE

- **GENERAL ORIENTATION**

Objectives: At the end of the session, the therapist should be able to

- establish rapport with the participants.
- obtain the baseline data for the research work.
- introduce to the participants to what Dialectical Behaviour Therapy means

Stage I: Setting the Climate

The researcher welcomes the participants and introduces himself and the research assistants.

He then requests each participant to introduce him / herself in order to establish rapport with their researcher and the research assistants.

Stage II: Introduction of Dialectical Behaviour Therapy and its Benefits

The researcher explains to the participant that DBT is a form of Cognitive Behavioural Therapy which is designed to help people (adolescents) with patterns of emotional dysregulation, who "hate" themselves and are dissatisfied with life. Perhaps because of some difficulties they are passing through and their negative interrelationship with others. Such people are depressed, anxious of what their outcomes in examinations would be among other things.

DBT focuses on helping participants modify their ways of thinking and behaving. It equally focuses on helping the client learn and apply skills that will decrease emotion dysregulation and unhealthful attempt to cope with strong emotions. Researcher informs the participants that this is the goal of this treatment exercises.

The researcher also informs the participants that in the course of the exercise, their various thoughts about test-taking and their abilities that interfered with performance in examination would be evaluated and revalidated to help them discard the behaviour that get them over anxious.

Stage III: Administration of Scales.

The facilitators (researcher and research assistants) distribute the Westside Test Anxiety Scale and Rosenberg Self-esteem Scale to the participants. The researcher gives adequate instruction on how to fill the scales. The research assistants helps the participants read and interpret questions that seems difficult to the participants. At the end of filling, the researcher collects the scales.

Stage IV: Behavioural Homework and Evaluation

The participants are given assignment to write at least 10 reasons why, if they have their own way, they would have like examination to be cancelled. They should also write in their diaries situations that make them afraid / anxious of examination.

The researcher then concludes by asking what the participants will expect in the therapy.

SESSION TWO

TOPIC: SETTING OF THERAPEUTIC GOAL

Objectives: At the end of the session the researcher would have achieved the following:

- Identifying the participants' invalidating thought
- Guiding the participants' in setting therapeutic goals
- Obtaining the participants' commitment to the therapy.

Stage I: The Review of last session and behavioural home work

The researcher reviews the previous session. Thereafter, he asks the participants to discuss the reason why they think examination should be replaced with another method of assessing students' performance. He then goes ahead by asking them to read out those factors they have written in their diary that make them too anxious about examination.

Stage II: Setting of Therapeutic Goal

The researcher assists the participants to set therapeutic goals that would be based on the identified invalidating thought patterns which enhance test anxiety which they have written on their diaries.

The goals of the therapy would be to

- reduce and then eliminate the negative thoughts that provokes anxiety which in turn serve as life threatening behaviour.
- reduce and eliminate behaviours that interfere with treatment such as the therapy avoidance.
- decrease behaviours that interfere with / reduce quality of life such as avoidance, test avoidance and anxiety.
- increase behaviour skill that will
  - (i) control their attention, so they stop worrying about the future or obsessing about the past.
  - (ii) understand what emotions are, how they function, and how to experience them in a way that is not overwhelming.
  - (iii) tolerate emotional pains without resorting to self-harm or self-destructive behaviours.
- enhance respect for self.

Stage III: Making a Commitment to Therapy

The therapist encourages the participants to make commitment to the therapeutic session by giving them the commitment slip to sign. The content of the commitment include the following:

Participants' agreement

- Stay in therapy for the specified time period.
- Attend scheduled therapy sessions
- Work toward reducing test-anxious behaviours as a goal of therapy.
- Work on problems that arise that interfere with progress of therapy.
- Participate in skill training for specified period.

Therapist Agreement

- Make every reasonable effort to conduct competent and effective therapy.
- Obey standard ethical and professional guidelines.
- Be available to the participants for weekly therapy sessions and provide needed therapy back-up.
- Maintain confidentiality.
- Obtain consent when needed.

Stage IV: Behavioural Homework and Evaluation

The therapist requests that the participants write all they know about test anxiety: Meaning, reasons, manifestation and effects. The therapist appreciates the participants for their full participation and rounds off the session.

SESSION THREE:

TOPIC: TEST ANXIETY: MEANING, CAUSES AND CONSEQUENCES

Objective: At the end of the session the therapist should be able to assist the participants to:

- explain the concept: test anxiety.
- Identify causes of test-anxiety
- Explain the consequences of test anxiety.

Stage I: Review of the Past Session

The researcher reviews the past session with the participant. He then asks them to read what they have written on their diaries on test anxiety. The researcher then guides them and puts them through.

Stage II: The Meaning of Test Anxiety

The therapist explains test anxiety as a feeling of agitation and distress about the test and its outcome. Anxiety can be labeled as "anticipatory anxiety" if one feels distressed while studying and when thinking about what might happen when one takes a test. Anxiety can also be labeled as "situational anxiety" if it occurs while taking a test. Some anxiety is natural and helpful to keep one mentally and physically alert; but too much of anxiety may be dangerous. Anxiety occurs in a wave, so it will

increase from the time one first recognizes it, come to a peak, and then subsides naturally.

Stage III: Causes of Test Anxiety

The therapist explains the following as causative factors in test anxiety.

- Lack of familiarity with the test.
- Lack of mastery of the subject being tested upon
- Poor preparation.
- Worrying about the following:
  - (i) Past performance on exam.
  - (ii) How friends and other students are doing.
  - (iii) Negative consequences of failure – (e.g. what parents, teachers, siblings will say or do)
- Negative thoughts about yourself.
- Allowing the test environment to get on your nerves.
- Believing certain myths about test and the examiners.

Researcher asks the participants to identify their own causes of test anxiety.

Stage IV: Manifestation and Effect of Test Anxiety

The researcher discusses the following nature and effects of test anxiety.

Anxiety has physiological, behavioural and Psychological effects. Physiological reaction may include rapid heartbeat, muscle tension, dry mouth, or perspiration. Behavioural reactions may include an inability to act, make decisions, express oneself, or to deal with everyday situations. Consequently one may have difficulty:

(a) reading and understanding questions.

(b) organizing thoughts or

(c) retrieving key words and concepts e.t.c.

Psychological reactions may include feelings of apprehension, uneasiness, upset and self-doubt.

Stage V: Behavioural Home work and Daily Evaluation

The therapist asks the participants to reason together on why the young people who are learning disable are more vulnerable to test anxiety than other students. The

researcher ends the session by asking the participants to say what they gain from the session. He then asks them to write in their diaries, methods which they have been using to cope with their anxiety.

SESSION FOUR: MINDFULNESS TRAINING

Objectives:

The researcher wishes to achieve the following at the end of the session.

- To review participants' homework and provide feedback.
- To explain to participants' what mindfulness means and how it works.
- To equip the participants with basic skills in mindfulness.

Stage I: Review of Behavioural Homework

The researcher asks the participants to present to him what they have written in their dairies on the methods they personally use to cope with test anxiety. He then discusses the benefits and side effects of those methods with the participants. From there, he introduces the concept of mindfulness.

Stage II: The concept of mindfulness

The therapist explains the concept of mindfulness as "paying attention in a particular way: on purpose, in the present moment, and non-judgmentally". When one practices mindfulness meditation, one practices being in the present moment, and noticing all of one's experiences. It involves being aware of one's experience without judgement.

The therapist then explains the concept of Wise Mind by explaining two state of mind namely: Reasonable and Emotional Minds.

Reasonable Mind: This is the rational, thinking, logical mind.

Emotional Mind: This describes, times when one's emotions are out of control – times when emotions are what influence or control your thinking and behaviour.

Wise Mind: The active integration of Emotional mind and reasonable mind.

Stage III: How To Take Control of Your Mind: "What" Skills

The researcher explains the follow "what" skills in coping with test anxiety.

(A) **Observing:** This means attending to events, emotions and other behaviour responses without necessarily trying to end them because they are painful or prolong them when they are pleasant.

(B) **Describing:** This emphasizes putting words on the experience when a feeling or thought arises, or one does something, one should acknowledge it e.g. "I am anxious", "I am afraid of the outcome of this test", "the thought I can't do this has come into my mind" etc. It involves putting experience into words.

(C) **Participating:** This is about awareness. It is about being totally present when engaging in activities. It involves entering into one's experience. Letting yourself get involved in the moment, letting go of ruminating.

Stage IV: How To Take Control of Your Mind? "How" Skill

The researcher further explains how to go about the above skills using the following skills.

(i) **Non-Judgmentally:** Here, the participants are taught to see but don't evaluate. They are to take a nonjudgmental stance. Just the fact. They are to focus on "what" not the "good" or the "bad" the "terrible" or the "wonderful" the "should" or the "shouldn't".

(ii) **One mindfulness:** This involves doing one thing at a time. Doing things with all attention. Using the following:

- Trying ***letting go of distraction*** that comes one's way.
- ***Concentrate your mind.***
- ***Thought stopping***: Tell the intrusive or bothersome thoughts to go away, many times, if necessary.

(iii) **Effectively:** The participants are asked to focus on what works and do what needs to be done in each situation. They should act as skillfully as they can; meeting the needs of the situation they are in, not the situation they wish they are in.

Stage V: Behavioural Homework and Daily Evaluation

The researcher reviews the session with the participants by asking some participants to come and role play what is taught in the session. He gives the participants the assignment to think on one situation in their lives that make them test

anxious and then apply these mindfulness skills. They should write their experience in their diaries.

SESSION FIVE: DISTRESS TOLERANT SKILL

Objectives: At the end of the session, the therapist would have achieved the following:

(i) Revision of homework to see how the participants are gaining mastery of their anxiety management skills.

(ii) To explain to the participants series of distorting thoughts that lead to anxiety.

(iii) To empower the participants with crises survival strategies.

Stage I: Review of Homework

The researcher asks the participants to bring out their diaries and narrate their experiences while practicing core mindfulness. He then provides them with feedback with commendation of their efforts.

Stage II: Cognitive Distortions

Researcher explains the following cognitive distortion thoughts which enhance anxiety.

- **All or Nothing Thinking:** You see things in black and white categories. If your performance falls short of perfection, you see yourself as a total failure.
- **Over-Generalization:** You see a single negative event as a never-ending pattern.
- **Mental Filter:** You pick out a single negative detail and dwell on it exclusively, so that your vision of all reality becomes darkened.
- **Disqualifying the Positive:** You reject positive experiences by insisting they "don't count" for some reason or another.
- **Jumping to Conclusions:** You make a negative interpretation even though there are no definite facts that convincingly support your conclusion.
- **Mind Reading:** You arbitrarily conclude that somebody is reacting negatively to you, and you don't bother to check this out.

- **Fortuneteller Error:** You anticipate that things will turn out badly and you feel convinced that your prediction is an already established fact.
- **Personalization:** You see negative events as indicative of some negative characteristics of yourself or you take responsibility for events that were not your doings.
- **Catastrophising:** Attributing extreme and horrible consequences to the outcomes of events.
- **Emotional Reasoning:** Assuming that one's negative emotions necessarily reflect the way things really are.

Stage III: Crisis Survival Strategy: Wise mind ACCEPTS

The researcher explains that the goal of DBT is to teach skills for tolerating (dealing with, getting through, accepting) the distressing events and activities in our lives. One of these is Distracting: Wise Mind Using the Ancronyms ACCEPTS. He then explains the skills.

- Distract with **A**ctivities - Engage yourself in various interesting activities.
- Distract with **C**ontributing: Contribute, Do Volunteer work.
- Distract with **C**omparisons: Compare yourself to people coping the same as or less well than you.
- Distract with opposite **E**motions.
- Distract by **P**ushing away a distressing situation by leaving it mentally for a while
- Distract with other **T**houghts
- Distract with other **S**ensations.

Stage IV: Self-Sooths

The researcher explains that Self-soothing Techniques has to do with confronting, nurturing and being kind to oneself. The best way of doing this is by soothing each of your five senses.

- **Soothe with vision:** Look at the nature around and watch beautiful thing nature has made.
- **Soothe with Hearing:** Listen to beautiful music or other sounds of nature.
- **Soothe with Smell:** Notice all the different smells around you.

- **Soothe with Taste:** Have a special treat and eat it slowly, savouring each bite.
- **Soothe with Touch:** feeling things that are exciting

State V: Homework and Daily Evaluation

The researcher asks the participants to mention two crisis surviving skills discussed during the session and their methods. He then asks the participants to try some of the Distracting Skills and Self-soothing Skills during the week and write their experiences in their diaries.

SESSION SIX

TOPIC: CRISIS SURVIVAL STRATEGIES

Objective: The researcher wishes to obtain the following at the end of the session.

- To review the previous session and see how the participants are faring.
- To equip the participants with more distress tolerant skills using improving the moment method.
- To empower the participants on how to manage their anxiety using thinking of pro and cons.

Stage I: Review of Homework

The researcher reviews the previous session and the home work of participants by asking them to share experiences on previously taught skills: Distracting Skills and Self-Soothing.

Stage II: Skills in Improve the Moment

The researcher explains that there are other skills to learn to deal with our distressing moments apart from distraction and self-soothing skills. These skills are useful mostly when we cannot change the situation we are in, or the struggles we are having, we can change the way we feel. The skills to improve the moments include:

(a) **Imagery:** You create a situation or a scene that is different from the one that you are now.

- Picture a place in your mind where you feel good and save.
- If you are having anxiety with examination, picture yourself dealing with it effectively. Tell yourself you can handle the situation.

(b) **Creative meaning:** Change your feelings by changing the way you think about yourself and situation. Think of positive things that can come out of that situation. See yourself doing your best to get through a difficult situation.

(c) **Prayer:** This is praying to Supreme Being. In moment of great anxiety prayer can relieve distress or help to tolerate it better.

(d) **Relaxation:** The use of relaxation and stress reduction, exercises is an excellent way to feel better in the moment. Examples are listening to relaxation tape, exercising hard, taking a hot bath etc.

(e) One thing in the moment

(f) Vacation

(g) Encouragement

Stage III: Thinking of Pro and Cons.

The research explains another method of distress tolerance i.e. thinking of pro and cons. Pro and cons is the skill in which we think of advantages and disadvantages of a particular course of action. He asks the participants to pick their diaries and list pro and cons of tolerating the test distress. He asks them to list pro and cons of not tolerating the test anxiety such as test avoidance, engagement in malpractice, use of drug etc. He asks the participants to focus in long time goal and remember times that the pains of examination has ended. The participants are to imagine how good they will feel if they don't act impulsively. They are also to remember what has happened in the past when they acted impulsively.

Stage IV: Behavioural Homework and Daily Evaluation

The researcher reviews the lesson with the participants. He commends their co-operation in the exercise. He then gives the participants a take home assignment to thinks of a problem in their life and use any of the 'improve the moment' and 'thinking of pro and cons' skills to solve it and write their experiences in their diaries.

SESSION SEVEN

TOPIC: EMOTIONS

At the end of this session the researcher would have achieved the following:

- Reviewing participants' behavioural homework and providing feedback on performance.
- Discussing the concept of emotion and where emotion comes from.
- Assisting the participants to know how to describe their emotions.
- Describing the functions of emotion to the participant.

Stage I:

The therapist calls some participants to review the past lesson. He also calls some volunteers to share their experience in the assignment given to them.

Stage II: What emotions are?

The researcher explains the concept of emotion thus: Emotion involves what we call action urges. An important function of emotions is to prompt to behaviour. The action itself is not part of emotion, but the urge to do the action.

He also gives examples of emotion such as anxiety, fear, guilt or shame, depression, anger etc.

He explains that there are two types of emotion namely: The primary emotion which is the one we feel first and the secondary emotion which comes after the first. E.g. a student who feels anxious (primary emotion) about examination may feel depressed (secondary emotion) at his / her performance after the exam.

Stage III: Sources of Emotion

The researcher explains that emotion comes from two main sources which are

- Reaction to things and people in our environment
- Reaction to things going on inside ourselves.

He relates these two sources to test anxiety.

Stage IV: How to Describe Our Emotions?

The researcher explains the following ways of describing emotions to the participants.

- Describe the prompting event for the emotion.
- **Interpretation of an event:** What you think about it. e.g "The examination is too difficult" (Event). "The teacher deliberately set the difficult question because of me" Interpretation.
- **Body Changes:** Notice the changes that happen in your body.
- **Action Urges:** Does the emotion prompt you to take action or to feel like taking action?
- **Expression and communication:** Express your emotion to communicate (express with words, facial expressions, and actions).

Stage V: Functions of Emotion

The researcher asks the participants to explain "what functions does emotion serve?" He then puts them through giving them the following functions.

- **Emotions Communicate to (and influence) others:** Some expressions of emotion have an automatic effect on others.
  - Researcher asks the participants to give examples of how their expression of emotions were misread and how they misread others expression of emotion.
- **Emotions organize and motivate action:** Emotion prepares for and motivates action. It saves time, helps to overcome obstacles and helps to achieve greater things.
- **Emotion can be self-validating** - Emotion can give us information about a situation or event.

Stage VI: Behavioural Homework and Evaluation:

The researcher commends the full participation of the participants. He then asks them to note the series of emotion they manifest during the week and how often in their dairies.

SESSION EIGHT

TOPIC: EMOTIONAL REGULATION.

Objectives: At the end of this session, the therapist wishes to achieve the following goals:

- equipping the participants with skills for reducing vulnerability to negative emotions.
- explaining to the participants steps for increasing Positive Emotions.
- teaching the participants on "letting go of emotional suffering"

Stage I: Review of Previous Session.

Researcher opens the session by asking the participants to voluntarily share what we learnt in the previous session. He also asks them to narrate their experiences as far as emotional manifestation is concerned as written in their diaries.

Stage II: Reducing Vulnerability to Negative Emotions.

The researcher explains the skill that helps us to be our best in dealing with emotions using this Ancronymys: PLEASE MASTER

P&L – Physical Illness (Treat)- Take care of your body

Eating (balance)-Don't eat too much or too little.

Altering drugs (Avoid mood altering drugs)

Sleep (Balance)-get amount of sleep that helps you feel good

Exercise (get)-Do some sort of exercise everyday.

MASTERy (build)-Try to do one thing a day to make yourself feel competent and in control (Do your best in studying)

Stage III: Steps for Increasing Positive Emotions.

The researcher explains the follow steps for increasing positive emotions to participants.

- **Building positive experiences** – Do pleasant things that are possible now. Make changes

  in your life so that positive events will occur more often.
- **Attend to relationships –** Repair the broken ones reach out for new ones and work on the current relationships.
- **Avoid Avoiding** – Avoid giving up.

- **Be mindful of positive Experiences**
- **Distracts** from thinking about (i) when the positive experience will end, (ii) whether you deserve this positive experience (iii) how much more might be expected of you now.

Stage IV: Letting Go of Emotional Suffering.

The researcher teaches the participant on how to forgo their emotional suffering thus:

- Observe your emotion.
- Experience your emotion.
- Remember you are not your emotion.
- Practice loving your emotion.

Stage V: Behavioural Homework and Evaluation

The researcher asks some of the participants to explain the steps in dealing with emotional difficulties as explained in the lesson. He asks them to think of situation in their lives when they manifest anxiety and then apply these skills. They should write their experiences in their diary.

SESSION NINE

TOPIC: INTERPERSONAL EFFECTIVENESS: SELF RESPECT EFFECTIVENESS

Objectives:

At the end of the session, the researcher aims at achieving the following:

- Equipping the participants with the basic concept of self respect.
- Strengthening them with skills to develop interpersonal relationship.
- Giving them skills that helps them balance their priorities with others demands.

Stage I: Review of Behavioural Homework

The researcher opens the session by commending the participants' cooperation so far. He asked them to review the past session and their experiences.

Stage II: Self-respect Effectiveness

Researcher explains self-respect effectiveness as involving maintaining or improving ones good feeling about oneself and respecting one's own values or beliefs when one tries to get what one wants. It includes acting in ways that fit one's morality and acting in ways that makes one feel competent.

Researcher also explains things that diminish one's self-respect over the long term which are:

- Giving in for the sake of approval
- Lying to please others
- Acting helpless – This also diminishes one's sense or mastery.

Stage III: Group Discussion

The researcher asks the participants to discuss the following questions:

- When have you done things that reduce your self respect?
- When have you done things to enhance your self-respect?

Stage IV: Skills for Self-respect Effectiveness

The researcher equips the participants with the following skills for self-respect using the ancronym. FAST.

Fair (be) – Be fair to yourself and other person in your attempt to meet your need (passing your exam.)

Apologies (no) - Don't apologize for the sins you did not commit. Apologize when apologies are warranted.

Stick to values – Don't sell your values, integrity, just to get what you want (passing your exam) or keep other person (parent & teachers) liking you.

Truthful (be) – Don't lie or act helpless when you are not. Don't yield to exam malpractice.

Stage V: Evaluation and Evaluation

The researcher asks the participants to jot down any session that they did not really understand. He also gives them assignment to take home.

Describe how you would explain the benefits of DBT to family members, friends and colleagues.

SESSION TEN

TOPIC: Administration of Post Intervention Questionnaires and Termination Of Therapy

Objectives:

- To obtain post intervention data
- To formally terminate therapy
- To appreciate participants

Stage I: Review of Therapeutic Sessions

The researcher reviews briefly all the therapeutic sessions, gives room for questions and answers them.

Stage II: Collection of Post Intervention Data

The researcher administers Westsides Test Anxiety Scale and Rosenberg self-esteem Scales and collects them on completion. He also collects the continuous assessment marks of the students from counsellor's office.

Stage III: Termination of Therapy

The researcher appreciates the participants and commends them for being actively involved in the therapy. He equally encourages them to monitor the gains of therapy.

EXPERIMENTAL GROUP 2: EXPOSURE THERAPY

SESSION ONE

General Orientation

Objective: At the end of the session, the therapist should be able to:

- Establish rapport with the participants.
- Obtain the baseline data for the research work
- Introduce to the participants the concept and benefits of exposure therapy.

Stage I: Setting the Climate

The researcher welcomes the participants warmly and introduces himself and the research assistants. He then requests each participant to introduce himself /herself in order to establish rapport with the researcher and the research assistants.

Stage II: Introduction of the Concept: Exposure Therapy

The researcher explains the concept of exposure therapy which they are about to undergo as a cognitive behavioural technique for reducing fear and anxiety responses. These anxiety responses include the fear of examination called "test anxiety".

Exposure therapy is based on the principles of habituation and cognitive dissonance. In the therapy you (the participants) will be presented with test anxiety – producing material for a long enough time so as to help you decrease the intensity of four emotional reactions. Based on this, the feared situation especially your test anxiety will no longer make you anxious.

Exposure therapies will also offer the following advantages:

- It will help you increase your tolerance for test anxiety.
- It will equip you with the boldness to confront tests instead of avoiding.
- It helps realize that the likeliness of your negative thought about the consequences of examination is low, and that the cost is less than you think. The participants are then encouraged to fully participate.

Stage III: Administration of Scales

The facilitators (research and research assistants) distribute Westside Test Anxiety Scale and Rosenberg Self-esteem Scale to the participants. The researcher gives adequate instruction on how to fill the scales. The research assistants helps the participants read and interpret questions that seem difficult to the participants while allowing them to make their own decision on each question. At the end of filling of the questionnaires, the researcher collects the scales.

Stage IV: Behavioural Homework and Evaluation

The participants are given assignment to write at least 10 reasons why, if they have their own way they would have like examination to be cancelled. They should also write in their diaries situations that make them afraid / anxious of examination. The researcher then concludes by asking what the participants will expect in the therapy.

SESSION TWO

TOPIC: SETTING OF THERAPEUTIC GOALS

Objectives: At the end of the session, the researcher would have achieved the following:

- Identifying the participants' areas of test anxiety.
- Guiding the participants' commitment to therapy.
- Obtaining the participants commitment to therapy.

Stage I: Review of Previous Session and Behavioural Homework

The researcher reviews the previous session. Thereafter, He asks the participants to discuss the reason why they think examination should be replaced with another method of assessing students' performance. He goes further to ask them to read out those factors they have written in their diary that make them too anxious about examination.

Stage II: Setting of Therapeutic Goal

The researcher assists the participants to set therapeutic goals that would be based on confronting their objectives of anxiety in examination. The main goal of the therapy is to reduce or eliminate test anxiety by the direct confrontation of tests or examination. The therapy will also aim at eliminating the post traumatic stress being experienced in the past about examination.

Stage III: Making a Commitment to Therapy

The therapist encourages the participants to commit themselves to the therapy by giving them commitment slip to sign. The content of the commitment will include, staying in the therapy for the specified time, full participation and attendance of therapeutic sessions among others.

The researcher will also commit himself to the therapy by obeying the standard ethics and professional guidelines, availability to the participants for weekly therapy and maintenance of confidentiality.

Stage IV: Behavioural Homework and Evaluation

The therapist requests that the participants write all they know about test anxiety: Meaning, reasons, manifestation and effects.

The therapist appreciates the participants for their full participation and rounds off the session.

SESSION THREE:

TOPIC: TEST ANXIETY: MEANING, CAUSES AND CONSEQUENCES

Objective: At the end of the session the therapist should be able to assist the participants to:

- Explain the concept: test anxiety.
- Identify causes of test-anxiety
- Explain the consequences of test anxiety.

Stage I: Review of the Past Session

The researcher reviews the past session with the participant. He then asks them to read what they have written on their diaries on test anxiety. The researcher then guides them and puts them through.

Stage II: The Meaning of Test Anxiety

The therapist explains test anxiety as a feeling of agitation and distress about the test and its outcome. Anxiety can be labeled as "anticipatory anxiety" if one feels distressed while studying and when thinking about what might happen when one takes

a test. Anxiety can also be labeled as "situational anxiety" if it occurs while taking a test. Some anxiety is natural and helpful to keep one mentally and physically alert; but too much of anxiety may be dangerous. Anxiety occurs in a wave, so it will increase from the time one first recognizes it, come to a peak, and then subsides naturally.

Stage III: Causes of Test Anxiety

The therapist explains the following as causative factors in test anxiety.

- Lack of familiarity with the test.
- Lack of mastery of the subject being listed upon
- Poor preparation.
- Worrying about the following:
  - (iv) Past performance on exam.
  - (v) How friends and other students are doing.
  - (vi) Negative consequences of failure – (e.g. what parents, teachers, siblings will say or do)
- Negative thoughts about yourself.
- Allowing the test environment to get on your nerves.
- Believing certain myths about test and the examiners.

Research asks the participants to identify their own causes of test anxiety.

Stage IV: Manifestation and Effect of Test Anxiety

The researcher discusses the following nature and effects of TA. Anxiety has physiological, behavioural and Psychological effects. Physiological reaction may include rapid hearbeat, muscle tension, dry mouth, or perspiration. Behavioural reactions may include an inability to act, make decisions, express oneself, or to deal with everyday situations. Consequently one may have difficulty:

(d) reading and understanding questions.

(e) organizing thoughts or

(f) retrieving key words and concepts e.t.c.

Psychological reactions may include feelings of apprehension, uneasiness, upset and self-doubt.

Stage V: Behavioural Home work and Daily Evaluation

The therapist asks the participants to reason together on why the young people who are learning disable are more vulnerable to test anxiety than other students. The researcher ends the session by asking the participants to say what they gain from the session. He then asks them to write in their diaries, methods which they have been using to cope with their anxiety.

SESSION IV.

TOPIC: Behaviour Analysis and Goal Setting

The researcher wishes to achieve the following after the end of the session.

- To review the participants homework and provides feedback.
- To conduct the behavioural analysis of test situations that generates fear and anxiety.
- To guide the participants to set goals on how to overcome each through exposure therapy.

Stage I: Revision of Previous Session and Behavioural Homework

The researcher reviews the previous session. He also asks the participants to open their diaries and voluntarily discuss the methods they have been using in coping with test anxiety. He then discusses the pros and cons of those methods with the participants.

Stage II: Identification and Ranking of Test Anxiety Provoking Stimuli

The researcher requests the participants to identify all aspects of the stimuli that influence their emotional reactions to tests e.g. lack of concentration on exam materials, fear of not remembering materials on the examination, wondering thoughts etc.

Stage III: Goal Setting

The researcher teaches the participants on how to set goals to tackle these feared situations in examinations. He explains goal setting as an activity that enables one to play what he or she wants to achieve in life.

He explains processes of setting goal. He asks the participants to

(i) choose a target situation from low on the list to start work on.

(ii) define a clear goal from the chosen situation: exactly what do you want to do.

(iii) break the goal down into hierarchy of a small manageable steps.

(iv) identify the steps needed for reaching the goal.

(v) get adequate information

(vi) set a reasonable time limit

(vii) review your progress

(viii) evaluate the progress

(ix) reinforce yourself

Stage IV

The researcher reviews the session and gives the participants take home assignment to set goals on how each of the identified feared situations would be solved.

SESSION FIVE

TOPIC: MUSCLE RELAXATION EXERCISES

Objectives: At the end of the session the research aims at achieving the following:

- Teaching the participants on how to turn down the activities of all their body muscles.
- Strengthening the participants' ability to engage in exercises in order to relax physically, mentally and emotionally.
- To assist the participants "get a grip" when feeling of fears and anxiety becomes overwhelming.

Stage I: Muscle Relaxation

The researcher explains that relaxation involves learning how to turn down the activities of all the muscles of the body to the extent that they become tension free, loose, calm, and physically inactive which would in turn lead to relaxed mental state.

Stage II: Practical Demonstration of Relaxation Skill

The participants are asked by the therapist to form a circle. He then teaches them the skill of "control breathing" which involves breathing in and out at controlled pace. Thereafter, they would be asked to do some physical exercises which entails raising their fingers, touching their knells, toes and thighs etc. The exercise is continued until their chest, shoulder, back, hands etc are well relaxed. The participants are encouraged to make posture statements like "I am calm and relaxed" repeatedly.

Stage III: Behavioural Homework and Sessional Evaluation

The researcher appreciates the participants' co-operation and encourages them to practice the relaxation exercise. He also asks them to share their experiences in relaxation exercise.

SESSION SIX

TOPIC: IMAGINAL EXPOSURE TRAINING

Objective: At the end of the session, the researcher would have achieved the following objectives.

- Helping the participants to engage in thoughts that have avoided and maintained the test anxiety structure.
- Equipping the participants with skills that make them process the fear, gaining distance and evaluating the probability and cost by repeatedly listening to feared experiences about oneself.

Stage I: Review of Previous Session.

The researcher reviews the previous session and asks them to share their experience or relaxation training.

Stage II: Setting the Climate

The researcher asks the participants to bring out the hierarchy of anxiety eliciting stimuli they have written during the previous session in their diaries. He asks them to go through them again and make the necessary adjustment. He asks them to also bring out the goals they have set on tackling each anxiety provoking stimulus beginning from the least feared situation to the highest.

Stage III: Creating a Script Evoking Most Fear Outcome

The researcher works with the participants to create a script evoking or exaggerating the most feared outcome. Both the researcher and the participants then make a tape recording of the script. The researcher then makes sure:

(a) the script is recorded for the client by the therapist or client, using the second person pronoun "You"….

(b) the story is told in the present tense.

Stage IV: Imagination of Fearful Stimuli

The researcher guides the participants to imagine each anxiety eliciting stimulus involving test or examination. The therapist assists in building the participants' strength and confidence. They are requested to write down their experiences in their diaries.

Stage V: Behavioural Homework and Sessional Evaluation

The researcher commends the participants' efforts in trying to imagine and confront the feared situation and anxiety with examination. He thereafter assures the participants that the situation they have experienced would be similar to what is obtainable in actual test situation.

He also asks them to practice the exercise at home.

SESSION SEVEN

TOPIC: IMAGINAL EXPOSURE USING TAPE RECORDER

Objectives:

- To assist the participants gain mastery of their negative thoughts over test situation.
- To help the participants get used to their test anxious thought till they notice lots of detail and get bored after a while.

Stage I: Review of Previous Session

The researcher reviews the previous session and asks the participants to share their experiences on take home assignment on imaginal exposure. He commends their efforts.

Stage II: Imaginal Exposure Training Using Tape Recorder

The researcher asks the participants to sit down forming a circle. He puts a tape recorder in their midst. He then has the patient listen to the tape repeatedly, with eyes closed with no distractions. The tape contains the script recorded during the last session. He does this for about 45 minutes. At the end of listening period, the participants record anxiety ratings during each listening period.

The researcher also asks the participants to record how their beliefs about the scenario change.

Stage III: Behavioural Home work and Sessional Evaluation

The researcher commends the efforts of the participants and asks them to share their experiences. He also asks them to practice the skill at home and record their experience daily in their diary.

SESSION EIGHT

TOPIC: IN VIVO EXPOSURE TRAINING

Objective: The researcher aims at achieving the following goals at the end of the session.

- Reviewing of participants' behavioural home work and providing feed back on performance.
- Providing the participants the skills in vivo exposure training that will give them mastery of their anxiety stimuli.

Stage I: Review of the Previous Session

The researcher randomly calls on participants to share their experience of the last session assignment. He then appreciates their efforts.

Stage II: Avoidance Versus in Vivo Exposure

The researcher explains the need to stop test avoidance behaviour and face the examination thus: Getting anxious can be unpleasant and distressing especially during examination. Consequently, students with test anxiety often learn to anticipate activities or situations that are likely to trigger distressing memories, fear, and anxiety. In an effort to avoid these unpleasant experiences (test), the person begins to avoid these trigger situations. Unfortunately, the more we avoid situations, or activities (test) the more those situations (test) are likely to make us anxious.

Avoidance only brings temporal relief. In practice, the thing we avoid becomes harder and harder to do, and gradually we avoid more and more things. By avoiding situations (e.g. test) we reduce our quality of life. However, if we are able to remain in stressful situation, your anxiety levels will eventually reduce.

Stage II: In Vivo Exposure Training

The researcher explains to the participants that there is another method of confronting ones fear of examination apart from imagining the situation. It is direct

confrontation of the test situation. He then gives them (the participants) the following guides to personally practice in vivo exposure.

(i) To use the list of feared situation that they have ranked in order of difficulty with the most frightening at the top.

(ii) Choose a target situation from low on the list to start work on.

(iii) State a clear goal from the chosen situation: exactly what you want to do.

(iv) Break the goals into a hierarchy of small manageable steps; which may include doing it initially with a trusted friend and later on your own; or going half way there at first, then all the way.

(v) Repeatedly confront the chosen step in your hierarchy, trying hard to stay there until the anxiety comes down.

(vi) When you can confront that step with only minimal anxiety, move on to the next one on the list, you will gradually progress up the list until you are able to confront your most feared situation (examination).

Stage IV:

The researcher offered the participants two monitoring forms. The first which is a detailed record of each in vivo exposure session, and the second which is a summary sheet to record their progress in vivo exposure sessions over time. He explains to them how to use the progress forms.

Stage V: Behavioural Homework and Sessional Evaluation

The research goes through the session again and encourages the participants to practice the skills at home and bring their records next session.

SESSION NINE

TOPIC: Practical Demonstration of In Vivo Exposure Skills

Objective:

The researcher aims at achieving the following at the end of the session.

(i) To strengthen the ability of the participants in direct confrontation of the examination with reduction in anxiety level.

(ii) To increase the self efficacy of the participants in confronting examination without resolving to avoidance behaviour.

Stage I: Motivation of the Participants

The researcher gets to the venue earlier than before, as the students have been informed that they are going to face their continuous assessment tests that week. He encourages them to keep cool and face the examination.

Stage II: Test I

The participants get to their various classes to write their test in the first subject.

Stage III: Test II

The participants are still exposed to another test situation by their subject teacher.

Stage IV: Test III

The participants write their last test for the day.

Stage V: Evaluation

The researcher gathers the participants together to share their experiences in the last three tests. He commends their efforts and encourages them to put more efforts in the subsequent tests.

SESSION TEN

TOPIC: Administration of Questionnaires and Termination of Therapeutic Sessions

Objective:

- To review all the sessions and conduct final evaluation.
- To collect the post intervention data
- To appreciate the participants
- To terminate the therapeutic session formally

Stage I: Revision of Therapeutic Sessions

The researcher reviews all the therapeutic session and gives the summary of all the skills needed in exposure therapy.

Stage II: Administration of Post Intervention Questionnaire

The researcher distributes the questionnaires on test anxiety and self-esteem (Rosenberg self-esteem scale). He then collects the questionnaires on completion. He also collects the continuous assessment score of the participants from the counsellor's office.

Stage III: Appreciation of Participants and Termination of Therapy

The researcher appreciates the participants for their active participation through out the sessions. He encourages them to maintain the gain of therapy. He thereafter terminates the therapeutic sessions formally.