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Test Anxiety: Benign or Malignant for Students with Vision Impairment?

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Abstract

Test anxiety has been identified as a threat in evaluative situations and academic performance by sighted students. Students with vision impairment are no exception to it. This study investigated the test anxiety scores of the students with vision impairment in South Australia. It also provided insights into the reasons for high test anxiety in the participants studied. This study was divided into two Stages-1 and 2. The Spielberger's Test Anxiety questionnaire was administered to the students with vision impairment in Stage 1. Interviews were conducted in Stage 2 with participants with vision impairment, their parents and teachers. The Stage 1 results revealed that the majority of the adult females with vision impairment and all adult males with vision impairment obtained high test anxiety scores. The majority of the adolescent females and males with vision impairment were noted to have test anxiety scores in the high to moderate range. A great number of participants with vision impairment scored higher in the emotionality in comparison to the worry subscale of test anxiety. The high test anxiety scores are congruent with the interview responses obtained from the three groups of respondents. A number of factors have been identified as the major determinants of test anxiety in students with vision impairment.

School students in any educational context are subject to a considerable source of worry and stress due to examinations, tests and other forms of assessments (Kouzma & Kennedy, 2004; Kyriacou & Moutantzi, 2003; Hodge, McCormick & Elliot, 1997; Jegede, Naidoo & Okebukola, 1996 as reported by Putwain, 2008, p. 319). Students with special educational needs are no exception. Test anxiety or fear of examinations is becoming increasingly prevalent across grade levels and populations of students (Casbarro, 2005). Reports of students who cannot sleep the night before an important test or who vomit the day of the test are increasing (Casbarro, 2005). The phenomenon of test anxiety is real, occurring in all learners. Trent and Maxwell (1980) characterise test anxiety as having potentially debilitating effects, and Hill and Wigfield (1984) have gone as far as to say it can actually create an

'invisible disability' (p. 107). Test anxiety has been regarded as a relevant and highly complex issue in academic settings, one that can hamper academic success in otherwise potential students (Neuderth, Jabs & Schmidtke, 2009). Every year, millions of students under-perform in school and university because of heightened test anxiety (Rezazadeh & Tavakoli, 2009). According to Rezazadeh and Tavakoli, 2009, as the test anxiety level of a student increases, his/ her educational achievement decreases and vice-versa, confirming a negative relationship between the two.

Students with high levels of test anxiety feel tense and worried in evaluative situations (Gierl & Rogers, 1996). Test-anxious students do not perform up to their potential when they take tests (Hancock, 2001; Hembree, 1988). Test-anxious students are reported to have lower standardised achievement test scores (Everson, Millsap, & Rodriguez, 1991), they experience more difficulty with learning new material in the classroom (Chapell, Blanding, Silverstein, Takahashi, Newman, Gubi & McCann, 2005) and attain poor classroom performance (Chapell et al., 2005; Cassady & Johnson, 2002). 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 higher rate of school dropout (Tobias, 1979; Schaefer, Matthess, Pfitzer & Kohle, 2007), and generalized anxiety (King, Mietz, Tinney, & Ollendick, 1995) and are known to produce psychic problems to suicidal behaviour (Schaefer et al. 2007). Among the students with high test anxiety, 91% of them also suffer from social anxiety, specific phobias and/or from other mental disorders (Schaefer et al., 2007). Left untreated, many of these negative effects of test anxiety are reported to increase in severity over time (Swanson & Howell, 1996). This makes test anxiety, a critical area of concern requiring immediate investigation and study.

Test anxiety and vision impairment

Evans, Fletcher and Wormald (2007) found that people who are vision impaired had a higher prevalence of depression compared to sighted people. It is likely that people who are vision impaired were more likely to experience problems with functioning, which in turn led to depression. Rees, Tee, Marella, Fenwick, Dirani and Lamoureux (2010) found that vision-specific distress to be the strongest predictor of depression among people with vision impairment in Melbourne, Australia. There was little evidence for any association between vision impairment and anxiety among them. Poorya, Hassan and Farzad (2011) found that there were no significant differences between blind and sighted students from schools of Khorasan Razavi Province, Iran in math anxiety. The interview responses revealed that continuous failure in previous maths exam led students who are blind to believe that maths achievement was not important for them, causing them to be less anxious during a maths

test. However, the researchers above investigated only the mathematics anxiety in blind subjects and failed to study test anxiety in relation to any examinations in general. On the contrary, Eniola (2007) established that students who are vision impaired were subject to greater amounts of anxiety when compared to their sighted peers and this was found to affect their performance in school. Asonibare and Olayonu, 1997 and Okwilagwe, 2001 went on to assert that due to the modern day complexities students in the general educational sector performed poorly in academics than what they used to do in the past. For students with vision impairment, this problem of low achievement in academics have been greatly pronounced due to factors like society's attitude towards them, lack of motivation on part of parents, lack of specialised teaching and learning facilities for them (Eniola, 2007). It is astonishing that when research has substantiated that there is a strong connection between higher anxiety levels and poor academic performance in students with vision impairment, there has been no research to date to study test anxiety in students with vision impairment and if that influences their academic achievement by any means.

This research was aimed to study the test anxiety in students with vision impairment in South Australia. This study further provided insights into the reasons for high test anxiety in these individuals under study.

Method

This research was divided into two stages for it to be successfully executed. In Stage 1, the Spielberger's Test Anxiety questionnaire was administered to participants with vision impairment to determine the test anxiety scores of the participants. In Stage 2 of this research, interviews were conducted with participants with vision impairment, their parents and teachers to provide insights into the reasons for high test anxiety in the individuals under study.

Participants

In this study, adolescents and adults from all levels of vision impairment were included. The visual acuity of the participants ranged from 6/18 or less (low vision) to 3/60 and less (blindness). All types of vision impairment (whether it was congenital or adventitious) were included. A total of 25 students with vision impairment (13 female and 12 male) completed the Spielberger's Test Anxiety questionnaire. The student samples were matched in terms of:

- Age - age range between 15 -18 years for the adolescents and between 19-25 years for the adults

- Education level - Year 9-Year 12 for the adolescents and Vocational courses for the adults
- Schools - there are three sectors of education in South Australia namely the Catholic Education System, Association of Independent Schools of South Australia (AISSA) and Department of Education and Child Development (DECD). Technical and Further Education (TAFE) is one of the post school options in South Australia. This study focussed only on the mainstream and specialist schools run by DECD and the TAFE Institutes because both are owned and operated by the Government of South Australia.

All Stage 1 students with vision impairment were invited to participate in the interview in Stage 2. The teachers and parents of those students with vision impairment who participated in Stage 1 were invited to participate in Stage 2 and the purpose of the study was explained to them. Out of the twenty five participants with vision impairment, fourteen participants with vision impairment opted for the interview. Four teachers and five parents agreed to be interviewed.

Instruments

The Test Anxiety Inventory (TAI), developed by Spielberger et al. (1980), is the most commonly used validated self-report instrument for measuring test anxiety and has been utilized in the majority of more recent studies of student test anxiety (Bradley, McCraty, Atkinson, Arguelles, Rees & Tomasino, 2007). The TAI provides a global measure of test anxiety as well as a separate measurement of two theoretically relevant components defined as 'worry' and 'emotionality.' The 'Worry' construct, which has been found to be most strongly correlated with depressed test performance in students with high test anxiety (Bradley, McCraty, Atkinson, Arguelles, Rees & Tomasino, 2007, p. 17), is essentially a measurement of the psychological aspects of test anxiety (i.e. thought processes and emotions relating to the fear of testing and dread regarding the potential for negative evaluation or failure). The 'Emotionality' construct provides a measure of the physical symptoms of test anxiety, e.g., nervousness, sweating, fidgeting, etc. (Bradley, McCraty, Atkinson, Arguelles, Rees & Tomasino, 2007). Students used a four-point scale to report how frequently they experienced specific symptoms of anxiety in test situations. The four choices are: (1) almost never, (2) sometimes, (3) often, and (4) almost always. The scoring weights for items 2 through 20 are 1 through 4 and for item 1 it is reverse scored i.e. 4 through 1. The Cronbach Alpha results for Test Anxiety Global was 0.92, for Test Anxiety Worry was 0.87 and for Test Anxiety Emotional was 0.90 respectively (Bradley, McCraty, Atkinson, Arguelles, Rees & Tomasino, 2007). Cronbach Alpha provides a measure of the internal consistency of a test or scale which describes the extent to which all the items in a test measure the same concept (Tavakol & Dennick, 2011). The research results indicated

that the TAI and its subscales provide reliable and valid measures of test anxiety as a situation-specific personality trait.

To investigate the test anxiety experienced by students, questions similar in nature were asked to the three groups of respondents- participants with vision impairment, their parents and teachers. The questions were as follows:

- To the students:
  'Describe your feelings when you take an assessment and why'?
  and
  'Do you get anxious in tests? Why and what could help you to overcome this'?
- To the parents:
  'Does your child get anxious during tests? Why and what could help your child to overcome this?'
- To the teachers:
  'Do your students with vision impairment get anxious during tests and why? What in your opinion could help anxious students to overcome this feeling during tests?'

Pilot Study

A pilot study was conducted on students with vision impairment in South Australia prior to the major data collection to test the appropriateness and robustness of the selected survey questionnaire. It was found that the participants comprehended and easily responded to the twenty questions asked in the Spielberger's Test Anxiety questionnaire and therefore, the survey questionnaire was found suitable and appropriate to be administered on participants with vision impairment in South Australia. The questions on the interview protocol were also trialled with people known to the researcher in order to refine questioning techniques and question structure prior to the formal interviews beginning, a technique also recommended by Donoghue (2007). To ensure that no emotional discomfort was experienced by any of the participants, parents and teachers the survey questionnaire and the interview questions were piloted with all three groups to identify potential problems (if any). The survey questionnaire and the interview questions were also checked by active researchers from two universities and vetted by professionals from the field of special education. Participants in the pilot study were informed of their right not to answer questions that caused them discomfort.

Procedure

This study was approved by the University of Adelaide Ethics and the Department of Education and Child Development (DECD) Ethics as well. Information sheet and consent forms were sent out to all three groups of respondents and the study was conducted with those from whom informed consent was obtained. The Spielberger's Test Anxiety

questionnaire was provided and administered individually to participants with vision impairment on a one-on-one basis. Although there were no time limits, most participants were discouraged to spend too much of time on any particular item. As the directions on the questionnaire indicated, participants circled their responses on the questionnaire itself. Since the administration was on a one-to-one basis, the researcher ensured that participants responded to all the items. When administering the TAI to participants, the researcher read the directions aloud while the participants read them silently. The total time estimated to fill out the Spielberger's test anxiety questionnaire by the students with vision impairment was 20-25 minutes. The Spielberger's Test Anxiety questionnaire for the students with low vision was on the enlarged print format and for some blind students it was in the Braille format. The enlarged print questionnaires were prepared by the researcher herself and the questionnaires on the Braille format were prepared at the Braille Unit in the school for students with vision impairment where prior contact had been established by the researcher. The interviews conducted with students with vision impairment and teachers were face-to-face, semi-structured in nature and interviews were audio-taped. The interviews conducted with parents were in the form of questions sent to their e-mail address which they answered and returned via e-mail. Electronic e-mail interviews are useful in collecting qualitative data quickly from a geographically dispersed group of people (Creswell, 2008).

Results

The test anxiety score demonstrates the magnitude of participants' fear of examinations. It indicates anxiety, worry and stress experienced by participants before and during any testing situation in class. Based on the Test Anxiety Inventory developed by Spielberger et al. (1980), the two subscales- worry and emotionality and the total test anxiety raw scores have been converted into T-scores for the analysis and interpretation. Conversion from raw scores to T-scores for two of the subscales-worry and emotionality and the total test anxiety have been provided in the Test Anxiety Inventory on the basis of four distinct sample references namely college undergraduates, college freshmen, community college and high school (Spielberger et al., 1980). The conversion tables for high school and community college were selected for this study. The college undergraduates and college freshmen reference scores were discarded because the samples used in this study did not fall under these categories. The adolescents and adults who participated in this study were most closely related with the high school and community college cohorts respectively. All adolescents who participated in this study belonged to high school and all adults who participated in this study were attending Technical and Further Education (TAFE) institutes closely matched to adult or community colleges. Therefore, the interpretation for total test anxiety, worry and

emotionality had to be undertaken on the adolescents and adults separately based on the Test Anxiety Inventory, however, the interview responses have been analysed triangulating the responses from the three groups-participants with vision impairment (which included adolescents and adults), parents and teachers.

Test Anxiety

According to the Test Anxiety Inventory, female adolescent participants with test anxiety scores between 32T and 47T are low on test anxiety, between 48T and 61T are moderate and between 62T and 76T are high on test anxiety (Spielberger et al., 1980). Male adolescent participants with test anxiety scores between 34T and 50T are low on test anxiety, between 51T and 66T are moderate and between 67T and 81T are high on test anxiety (Spielberger et al., 1980).

According to the Test Anxiety Inventory, female adult participants with test anxiety scores between 33T and 48T are low on test anxiety, between 49T and 64T are moderate and between 65T and 79T are high on test anxiety (Spielberger et al., 1980). Male adult participants with test anxiety scores between 35T and 52T are low on test anxiety, between 53T and 69T are moderate and between 70T and 86T are high on test anxiety (Spielberger et al., 1980).

Table 1 Overview of Adolescents' and Adults' T- scores for Test Anxiety

Female Adolescents	Male Adolescents	Female Adults	Male Adults
V.I. (N=6)	V.I. (N=6)	V.I. (N=7)	V.I. (N=6)
58	66	67	75
61	62	77	77
73	46	79	76
63	37	79	73
46	72	61	77
67	72	72	75
		77	

V.I. = Participants with vision impairment

Table 1, indicates that 50% of the adolescent females with vision impairment and 33% of the adolescent males with vision impairment obtained high test anxiety scores. Out of the remaining 50% of the adolescent females with vision impairment, 33% scored test anxiety scores in the moderate range and another 17% scored test anxiety scores in the lower range. Out of the remaining 67% of the adolescent males with vision impairment, 33%

obtained test anxiety scores in the moderate range and another 33% obtained test anxiety scores in the lower range.

Table 1, also indicates that 86% of the adult females with vision impairment and 100% of the adult males with vision impairment obtained high test anxiety scores. The remaining 14% of the adult females with vision impairment scored test anxiety scores in the moderate range.

Participants who are high in test anxiety tend to perceive evaluative situations as personally threatening; in test situations they are often tense, apprehensive, nervous, and emotionally aroused. Participants who obtained test anxiety scores in the moderate range are the ones who occasionally experienced some form of anxiety and stress before and during a testing situation; however, it did not detract participants' from their true level of performance. Participants who obtained test anxiety scores in the lower range are the ones who hardly experienced or never experienced any level of anxiety, fear or worry before and during an examination and these participants appeared to be relaxed, unperturbed and tranquil during an examination.

Worry

Liebert and Morris (1967) identified worry and emotionality as the two major components/ subscales of test anxiety. Worry is defined as the psychological or cognitive concerns and distress about the consequences of failure in a testing situation. It consists of negative performance expectations or worry about the testing situation.

According to the Test Anxiety Inventory, female adolescent participants with worry scores between 34T and 50T are low on worry subscale, between 52T and 59T are moderate and between 60T and 76T are high on worry subscale (Spielberger et al., 1980). Male adolescent participants with worry scores between 36T and 53T are low on worry subscale, between 55T and 62T are moderate and between 64T and 81T are high on worry subscale (Spielberger et al., 1980).

According to the Test Anxiety Inventory, female adult participants with worry scores between 36T and 53T are low on worry subscale, between 54T and 61T are moderate and between 63T and 79T are high on worry subscale (Spielberger et al., 1980). Male adult participants with worry scores between 38T and 55T are low on worry subscale, between 57T and 64T are moderate and between 66T and 83T are high on worry subscale (Spielberger et al., 1980).

Table 2 Overview of Adolescents' and Adults' T- scores for Worry Subscale

Female Adolescents V.I. (N=6)	Male Adolescents V.I. (N=6)	Female Adults V.I. (N=7)	Male Adults V.I. (N=6)
55	66	65	70
62	64	77	75
71	43	79	72
62	41	79	70
50	70	59	77
64	71	72	73
		79	

V.I. = Participants with vision impairment

Table 2, indicates that 67% of the adolescent females with vision impairment and 67% of the adolescent males with vision impairment obtained high worry scores. Out of the remaining 33% of the adolescent females with vision impairment, 16.5% scored worry scores in the moderate range and another 16.5% scored worry scores in the lower range. The remaining 33% of the adolescent males with vision impairment, obtained worry scores in the lower range.

Table 2, also indicates that 86% of the adult females with vision impairment and 100% of the adult males with vision impairment obtained high worry scores. The remaining 14% of the adult females with vision impairment scored worry scores in the moderate range.

Participants who are high in worry are the ones whose cognitive distress, concerns and negative thoughts are so high in an evaluative situation that it actually deters participants from performing to their true level. Moreover, the negative self-centred worry cognitions

which they experience distract their attention and interfere with concentration during examinations. Research indicates that these worry reactions contribute to the performance decrements of test-anxious students on cognitive-intellectual tasks (Liebert & Morris, 1967). Participants who are moderate in worry are the ones who experience any reasonable amount of cognitive concerns in a testing situation to the extent that it does not have a negative impact on performance. However, participants who are low in worry are the ones who do not experience any amount of cognitive distress and negative thoughts in a testing situation.

Emotionality Subscale

Emotionality is the other component or subscale of test anxiety (Spielberger et al., 1980). Emotionality is defined as reactions of the autonomic nervous system that are evoked by evaluative stress. Emotionality is the affective dimension; it refers to the physical reactions of students to the testing situation. Examples of such a reaction can be nervousness, fear, physical discomfort, sweating, constantly looking at the clock, pencil-taping and so on.

According to the Test Anxiety Inventory, female adolescent participants with emotionality scores between 31T and 47T are low on emotionality subscale, between 48T and 55T are moderate and between 57T and 72T are high on emotionality subscale (Spielberger et al., 1980). Male adolescent participants with emotionality scores between 34T and 51T are low on emotionality subscale, between 53T and 60T are moderate and between 62T and 78T are high on emotionality subscale (Spielberger et al., 1980).

According to the Test Anxiety Inventory, female adult participants with emotionality scores between 32T and 47T are low on emotionality subscale, between 49T and 56T are moderate and between 58T and 73T are high on emotionality subscale (Spielberger et al., 1980). Male adult participants with emotionality scores between 33T and 51T are low on emotionality subscale, between 53T and 61T are moderate and between 63T and 82T are high on emotionality subscale (Spielberger et al., 1980).

Table 3 Overview of Adolescents' and Adults' T- scores for Emotionality Subscale

Female Adolescents V.I. (N=6)	Male Adolescents V.I. (N=6)	Female Adults V.I. (N=7)	Male Adults V.I. (N=6)
59	64	66	72
59	62	73	76
71	49	73	72
60	34	73	74
44	74	59	70

67	71	68	74
		71	

V.I. = Participants with vision impairment

Table 3, indicates that 83% of the adolescent females with vision impairment and 67% of the adolescent males with vision impairment obtained high emotionality scores. The remaining 17% of the adolescent females with vision impairment scored emotionality scores in the lower range. The remaining 33% of the adolescent males with vision impairment, obtained emotionality scores in the lower range.

Table 3, also indicates that 100% of the adult females with vision impairment and 100% of the adult males with vision impairment obtained high emotionality scores.

Participants who are high in the emotionality are the ones who experience higher amounts of physical reactions and discomfort in a testing situation to the extent that it actually interferes with the participants' true ability levels while performing. Participants who are moderate in the emotionality are the ones who experience some bodily discomfort in a testing situation; however, the degree and magnitude of such physical reactions does not have an adverse effect on performance outcomes. Participants who are low in the emotionality are the ones who do not experience any amount of physical reactions and discomfort during a testing situation.

The qualitative interview responses are discussed in the sections below in relation to the three groups of respondents who participated in this study to provide insights into the reasons for high test anxiety for students with vision impairment.

Participants with vision impairment

Fear of examinations was a common feature that affected nine of the participants with vision impairment. They described their feelings as anxiety, impatience, restlessness, sweaty fingers and cold chills down their spines. Most of these students established such a high academic standard for themselves and to keep up to that became a real concern for them. A few among them attributed their fear of tests to lack of preparation and confidence. Two of the participants expressed themselves being nervous during tests due to their vision loss. They thought that there was a big gap between their potential for learning and their actual performance in class because of their vision deficiency. Thoughts like whether accommodations in the form of large prints will be provided to them during exams bothered them. Four of the participants seemed to be quite relaxed and calm during examinations and

confirmed that their disability was never a reason of concern for them. However, in general six of the participants exhibited some means as to how they could improve themselves during exams or keep them calmer and relaxed during tests. More learning in a weak subject area, greater amount of practice, having more confidence in oneself and additional reading were some of the popular strategies tried out by participants with vision impairment before taking an exam.

Therefore, it seemed that few of the participants with vision impairment were fairly flexible and open to devise strategies for themselves to do away with their fear of examinations; however, it required the intervention of teachers, special educators and School Counsellors, before it turns out to be a serious area of concern for this cohort.

Parents of students with vision impairment

Three out of five parents were in agreement that their children suffered from the fear of examinations. This was mainly because parents thought that their children's disability might not allow them to perform to their optimum level and became the sole reason of their failure in examinations. Two of the parents suggested that relaxation and meditation techniques can be useful to calm one down before exams, repetition and practice and providing extra time to students with vision impairment during an examination should help them to take a test or exam more comfortably. One of the parents appeared ignorant about test anxiety and was oblivious of the fact that whether her child was a victim to it or not. Another parent clearly informed that she never found her child to experience test anxiety because her child always prepared her lessons well in advance and had a good breakfast too.

Teachers of students with vision impairment

Three of the teachers believed that the vision deficiency in itself was a good reason for students with vision impairment to experience test anxiety. Though students with vision impairment were given ⅓ rd of extra time during examinations as compared to their sighted peers and proper resources were provided to them beforehand, however, the fact that they could not read a sentence in its entirety and had to scan information in a test word by word, was a cause of worry to them. Two of the teachers expressed the view that sometimes, students with vision impairment worried before examinations if the test was not in the right format for them. There were some exams which were more difficult for students who are blind or low vision to take. An instance pointed out by a teacher was in a music exam, where a Braille dependant student had to read all the music notations in Braille and it was really difficult for him to sit through the exam. It took him longer to read the Braille music notation compared to the sighted. Another example cited by a teacher was for a student with a

restricted field vision, during a dance exam. The student was required to observe an incredibly difficult sequence of dance steps and then perform it. This was an extremely difficult exam for this student and caused him unnecessary worry and anxiety during the examination. The format of the exam could not be changed because it was a group situation. Therefore, the result was that his grade had to be given for the dance sequences that were done throughout the year because the exam format could not be changed to accommodate his vision needs. Teachers indicated that these types of exams can cause real worry and anxiety for students with vision impairment.

One of the teachers commented that students' confidence can be increased and the fear of examinations can be reduced provided the frequencies of the exams in schools are increased. If they had to perform a task more number of times in a year that might make them competent and confident on that task. According to the teacher, if there was one term test, students with vision impairment may be subject to anxiety before the test. On the contrary, if they were exposed to exams/tests every week, the anxiety might wane off and they may feel more relaxed before the tests. Some good strategies have been provided by two of the teachers to reduce test anxiety in students with vision impairment in the form of more practice, repetition, drilling, over learning and providing the right kind of resources during an exam.

In summary, most of the participants with vision impairment and their parents confirmed that participants experienced anxiety and stress before and during exams, the reasons being multifarious. Some set such high standards and unrealistic expectations for themselves and to achieve that they had to undergo great amount of worry and tension. While others attributed their test anxiety to lack of preparation, improper test format and their vision deficiency. Teachers found that sometimes some exams which were heavily visual and cue dependent might be exceptionally difficult for a student with vision impairment. These were the times when the student had to endure unnecessary stress and angst during the exam.

Discussion

The survey questionnaire indicated that the majority of the adult females with vision impairment (86%) and all adult males with vision impairment obtained high test anxiety scores. The majority of the adolescent females and males with vision impairment were noted to have test anxiety scores in the high to moderate range. A greater number of participants with vision impairment were found to score higher in the emotionality in comparison to worry. This is indicative of the fact that participants with vision impairment were subject to bodily discomfort and greater physical symptoms of fear in comparison to the cognitive stress

experienced by these participants in a testing situation. This is in coherence with the qualitative responses as most of the participants with vision impairment expressed feelings similar to being nervous, anxious, uneasy and fretful before and during a testing situation. Eniola (2007) found that students who are visually impaired experienced greater levels of anxiety when compared to their sighted peers and this was found to cast a detrimental effect on the school performance of students with vision impairment. Some of the participants in this study attributed their vision deficiency to be the reason to it, while others thought that lack of preparation, high expectations set by participants, difficult test items and incorrect test format constituted the other factors contributing to test anxiety. This is similar to Young (1999) who indicated that sighted students suffered from test anxiety because students were unfamiliar to some question types and particular exam format which caused them to worry unnecessarily. Students with vision impairment were found to be no exception to these factors. In this research, it was just 4 participants with vision impairment out of 14 who thought that they felt relaxed and confident, while taking an examination. On a positive note, the majority of the participants tried to devise in some form their own techniques and strategies to overcome test anxiety and help them calm down before and during examinations. Most of the parents thought that their children with vision impairment underwent fear and anxiety before a testing situation. Teachers, however, thought on similar lines and often found that participants' disability was noted to be the main reason for them to develop fear and worry during examinations. Teachers found that students with vision impairment were tensed if the examination was not in the correct format for them or if the exam was heavily visual and cue dependent. Exposing students more to tests, greater practice, repetition, drilling and over learning were some of the measures suggested by teachers to alleviate students with vision impairment from test anxiety. The results of this study will assist teachers and special educators to gain an understanding on the test anxiety experienced by students with vision impairment and how examinations can be developed and formatted for this cohort of population.

Limitation of the study

The adolescents and adults with vision impairment who participated in this study were less in number (N = 25) may be perceived as a limitation of the study. It may however be justified that the study was based on a special group and accordingly, adolescents and adults with vision impairment who were willing to participate in the study and who also matched the matching criteria, were difficult to obtain by the researcher. For the future line of researchers, the test anxiety of the students with other kinds of special educational needs and disabilities should be investigated.

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