

**EFFECT OF SELF-INSTRUCTION TECHNIQUE IN REDUCING TEST ANXIETY AMONG
SECONDARY SCHOOL STUDENTS IN ANAMBRA STATE.**

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Abstract

Most times, students on the verge of entering for school tests or examination are seen to exhibit some forms of anxiety, such as restless, trembling, fidgeting or panicking. Consequently, this study sought to determine the effect of self-instruction technique in reducing test anxiety among secondary school students in Anambra State. Two research questions and two null hypotheses guided the study. The design for this study was a quasi-experimental design. The population of students with test anxiety is 453. A sample of 70 students with test anxiety was selected for the study and purposive sampling technique was used in choosing two schools in the area of the study. Test Anxiety Inventory was used for data collection. Test Anxiety Inventory has both validity and reliability of 0.81. The study involved two groups; the experimental group I was given self-instruction technique and the control group was given conventional counselling. All the groups were exposed to treatment for a period of eighth weeks. Pre-test and post-test were administered to both groups. Mean scores were used in answering the two research questions and ANCOVA was used in testing the two null hypotheses at 0.05 level of significant. The finding of the study shows that self-instructional technique is effective in reducing the students' test anxiety based on their lost mean scores. Recommendations were made that: the use of self-instruction technique should be commenced in full force in secondary schools irrespective of students' gender as a way of reducing students' test anxiety.

Keywords: Effect, Self-Instruction Technique, Test Anxiety, Secondary School Students, Anambra State.

Introduction

Background to the Study

Most times, students at the verge of entering for school tests or examinations are seen to exhibit some forms of anxiety, such as restless, trembling, fidgeting or panicking. This experience of distress before, during or after tests or examinations could be a psychological condition, which is a type of anxiety disorder. This should not be the case because examinations or tests are normal situations which one should not be

afraid to participate in (Nwankwo, Obi & Obi, 2014). Nwankwo, Obi and Obi note that it is common to see secondary school students meditating and expressing openly the type of distress they have during examination or test.

In Nigeria, especially in Anambra State, most students experience anxiety during test. It is obvious that most people often experience a general state of worry or fear before confronting something challenging such as tests, examination, interview both written and oral (Nwankwo, Obi & Obi, 2014). Hill and Wingfield, (2007), note that one of the worries of educational system is tests and examination problem. School tests, especially standardized achievement tests make unique demands in children. These include test time limits and time pressure which creates stress especially among anxious children who prefer to perform slowly and cautiously.

However, in schools, testing is used to determine if students are mastering the information being presented during instructional time. Blacks (2005), posits that today students are associating a greater sense of consequence with the prospect of being tested resulting in feelings of pressure to perform and fear of not performing adequately. As a result of the attention focused on passing important tests throughout one's educational career, a great deal of pressure is added to achievements and grades. Collins, (1999) and Huberty (2010) and Supon (2014) posit that as a result of the increased pressure to do well, many secondary school students' become anxious when presented with tests. This form of anxiety is known as *test anxiety*.

More so, Elinat (2008) opines that, anxiety is an unpleasant emotion characterized by feeling of vague, unspecified harm that can cause a state of physical disturbance and characterized by the absence of an apparent cause. Anxiety is a phenomenon that human beings routinely encounter within their daily experience. It is considered to be one of the most prevalent and persuasive human emotions with a large sector of the world population suffering from excessive and over bearing levels (Rachman, 2009). Anxiety can be described as a perceived notion of psychological distress which occurs due to the expectation of a disconcerting and potentially threatening event. As a result of the ubiquitous nature of anxiety, the construct has been defined as different sub-types (social anxiety, test anxiety, trait anxiety). Heidi, Meera, Steven, Lincol & Amanda (2009). The focus of the present study is on test anxiety.

Moreover, Spielberger (2005) defines test anxiety as an unpleasant state characterized by feeling of tension and apprehension, worrisome thoughts and activation of autonomic nervous system, when an individual faces an evaluate achievement demanding situation. Test anxiety is a psychological condition in which people experience extreme distress and anxiety in testing situations. While many people experience some degree of stress and anxiety before and during examination, test anxiety can actually impair learning and inhibit test performance. Test anxiety is a type of performance anxiety. In situation where the pressure is on, and a good performance counts, people can become anxious that they are actually unable to do their test. The severity of test anxiety can vary considerably from one person to another. Some people might find it difficult to concentrate on the examination while others might experience a racing heart beat and a sense of shakiness.

Furthermore, most threatening events that cause anxieties in students today, according to Harris and Coy (2003) are testing. Testing anxiety occurs when one develops an extreme fear of performing poorly in examination or tests. Reynolds and Fletcher (2002) see test anxiety as the variety of responses - psychological, behavioural and phenomenal that accompany an individual's perceptions of failure. The person experiencing test anxiety often has a fear of failure as well as a high need to succeed. Test anxiety is frequently cited among the vitally important factor at play in determining a wide array of unfavourable outcomes for students, including poor cognitive performance, scholastic under achievement, psychological distress and ill-health (Zeidner, 2004). Test anxiety has been found to interfere with competence both in laboratory setting as well as in true to-life situations in school or collegiate setting (Zeidner, 2004). People usually experience anxieties about events they cannot control or predict, or about events that seem threatening or dangerous. Test anxious students tend to react with threat perceptions, reduced feelings of self-anticipatory failure attributions more intense emotional reactions and arousal at every first sign of failure.

In addition, Adeold and Adedipe (2003) note that anxiety over test situation are emotional problems, which if not attended could result in neurotic difficulties. For some students, however, the symptoms of anxiety can become so excessive that it makes it difficult or even impossible to concentrate while preparing

of test. The test anxiety symptoms such as nausea, sweating and shaking of hands can actually make students feel even more nervous, especially if they become preoccupied with test anxiety (Egbochukwu & Obada, 2008). Test anxiety regardless of the originating causes can be debilitating state of arousal. It has led to stress, poor academic performance and frustration (Harris & Coy, 2003). This according to Egbochukwu (2000) is one of the reasons why guidance counsellors are needed greatly in the schools because cases like these which are not medical cases could keep reoccurring if not handled. Reducing test anxiety has been one of the most important concerns in most test anxiety researches.

Also, a number of studies, mostly in western society, have also investigated the efficacy of interventions in reducing test anxiety among secondary school students, even though they have shown ambiguous outcomes (Busari & Osikipool, 2000). Although there have been positive results with cognitive behavioural interventions (Stober, & Pekrun, 2004), anxiety reduction researchers are yet to explore more areas that may drastically curb the anxiety levels of secondary students. Two popular techniques that came up after the failure of auto-suggestion to adequately reduce test anxiety are self-instruction and relaxation techniques.

Self-instruction technique is based on the principle of focused attention, self-evaluation and self-verbal mediators while relaxation is focused in tackling any response to test anxiety provoking situation. One of such areas that have suffered neglect is the use and application of a combination of self-instruction and relaxation techniques among secondary school students. Self-instruction and relaxation techniques are behavioural techniques for reducing anxiety. Similarly, Richard (2007) notes that self-instruction technique was designed to help individuals with test anxiety in becoming aware of their self-defeating and irrelevant thoughts which interfere with their preparation and effective examination taking. Explaining further, Ekeruo (2009) points out that in using self-instruction to modify a client, modifier instructs the person to adopt the concept of talking to himself and the child should be helped to build up a repertoire of self-statements to be used on a variety of tasks, by taking off from the area the child has not recorded failures or frustrations, making use of tasks that have self-instruction approach and encourage the use of cognitive strategies.

Hence, Richard (2007) in his views stresses the steps in self-instruction therapy to include memorizing the instruction and learning to say then at the required time. Self-instructional training can be applied to great variety of behaviours, such as anxiety, anger, eating problems and creative difficulties. Sarafino (2011) opines that self-instruction is an antecedent statement people make to themselves describe directs, or guides the behavior they perform. Self-instruction is the ability of one to cognitively plan, organize, direct, reinforce and evaluate one's own independent learning without a teacher's prompting. There is need for counsellors to provide programs that could assist students, especially helping students to view themselves in a positive manner. Such programmes will go a long way towards reducing test anxiety and creating a positive academic atmosphere. This could be achieved through self-instruction technique such as stopping the negative thoughts through thought stopping and lastly building positive thoughts which come in form of self-verbal mediators. It is against this backdrop that the study seeks to determine the effect of self-instruction on test anxiety among secondary school students in Anambra state, Nigeria.

Purpose of the Study

The main purpose of this study was to determine the effect of self-instruction technique on test anxiety among secondary school students.

Specifically the study seeks to determine:

1. The difference in the pretest and posttest test anxiety mean scores of students treated with self-instruction and those received conventional counseling.
2. The differences in the pretest and posttest test anxiety mean scores of male and female students treated with self- instruction technique.

Research Questions

The study was guided by the following research questions.

1. What is the difference in the pretest and posttest test anxiety mean scores of students treated with self- instruction and those received conventional counselling?

2. What are the differences in the pretest and posttest test anxiety mean scores of male and female students treated with self- instruction technique?

Hypotheses

The following null hypotheses were tested at 0.05 level of significant.

1. There is no significant difference in the effect of self-instruction in reducing secondary school students' test anxiety when compared with those in the control group who received conventional counselling using their mean scores.
2. There is no significant difference in the effectiveness of self-instruction in reducing secondary school students' test anxiety of male and female students.

Empirical Studies on Self-Instruction

Azuji, Anyamene and Nwokolo (2015) investigated the effect of systematic Desensitization Technique in reducing Test Anxiety among secondary school students in Onitsha urban area. Research questions were posed and hypotheses formulated to guide the study. The study adopted a quasi-experimental research and employed a 2 x 2 factorial, design pre test-post test experimental control group, comprising the groups (Experimental group and control) using one treatment group (systematic Desensitization Technique (SDT)). The population comprised all the secondary school students in Onitsha urban area with test anxiety. A total of 75 students were selected from three schools using a standardized instrument titled: Test Anxiety Inventory. The instruments, Test Anxiety Inventory as administered to both the experimental group and the control group before and after treatment making up the pre-test and post-test. The data relating to the research questions were analyzed using mean scores. The data relating to the null hypotheses were analyzed using the Analysis of co-variance (ANCOVA). The result of the study showed that systematic desensitization technique was effective and significant in reducing test anxiety. The study further revealed that the difference on effectiveness of systematic desensitization technique in reducing test anxiety of male and female students is not significant. Based on the findings were highlighted recommendations and suggestions for further studies. The researchers recommended among others that systematic Desensitization technique should be utilized by guidance counselors in reducing test anxiety among secondary school students in the state and the nation in general.

Ubangha, Nwadinigwe and Iyayio (2014) investigated the effectiveness of self-mentoring and Cognitive Restructuring in the modification of adolescent aggression among selected senior secondary school students in Lagos State. The study utilized survey research design to obtain the baseline data while the second phase was a Quasi – experimental pretest post-test control group design. It was hypothesized that there would be no significant difference in post treatment aggression between adolescent students treated with cognitive Restructuring and those exposed to mentoring. Through multistage sampling technique, a total of 420 adolescents were drawn from six senior secondary schools in Lagos State, Nigeria and they provided baseline data for the study. However, the final sample consisted of 94 (47 male and 47 female) adolescents identified as aggressive. Buss and Perry (1992) Aggression Questionnaire, Rathus (1973) Assertiveness schedule and Mynard and Joseph (2000) multidimensional peer victimization scale were adapted by the researcher and used to collect the relevant data which were analyzed using Analysis of covariance (ANCOVA) technique. The findings revealed that mentoring was more efficacious than cognitive Restructuring in the modification of aggressiveness in adolescent students. These findings were situated within the existing body of knowledge and their implications for counseling Education were discussed.

Method

Research Design

The research design for this present study was quasi-experimental. Akuezuilo and Agu (2004) pointed out that quasi experimental research design could be used in school setting where it is not always possible to use pure experimental design which they consider as disruption of school activities. It utilized the non-randomized pretest- posttest control group design comprising of 3 main groups (Experimental group I, and Control group) using one treatment group [Self instruction techniques (SIT)].

Table 1: Diagrammatic representation of the experimental design

A non-randomized pretest and post-test control group design

Group	Pre-test	Research condition	Post-test
Experimental	T ₁	X ₁ (treatment)	T ₂
Control	T ₁	X ₀ (Neutral interaction)	T ₂

T₁ stands for the pre-test that was given to all the students

X₁ stands for the treatment (self-instruction techniques) which was given to the experimental group 1.

X₀ stands for treatment that was given to the control group.

T₂ stands for the post-test was given to both the experimental and control groups.

Population of the Study

The population of the study was 453 students. These comprised of all the senior secondary school students (SS I & SS II) from all the co-educational secondary schools in Onitsha Urban Area with high test Anxiety. The students' population was identified through pre-test administration of test anxiety inventory (TAI). The students found with high in test anxiety constituted the population. They were considered appropriate for this study because they are usually the one's experiencing test anxiety. There are 21 secondary schools in Onitsha Urban area (9 co-educational secondary schools) with a total population of 1,463. In addition to measuring individual difference in anxiety in test situation, the TAI sub scales assess worry and emotionality as major component of test anxiety. Students who scored 40 and above were included in the study.

Sample and Sampling Technique

The sample group of the research was 70 students. This comprises of senior secondary school (SS I & SS II) students that were identified with test anxiety from two selected co-educational secondary schools. Two schools with the highest number of students with highest level of test anxiety were the ones selected for this study from the secondary schools in Onitsha Urban Area. A purposive sampling technique was used in selecting two secondary schools because they have the highest number of students with test anxiety. The instrument, test Anxiety inventory was used for the identification of students with test anxiety problem. The two schools with the highest number of students with test anxiety served as the experimental groups I, and II (control group) respectively. Simple random sampling technique was used in selecting 35 students with test anxiety each for the three schools by balloting method without replacement.

Instrument for Data Collection

Test Anxiety inventory was adapted by this researcher from Spiel Berger (1980), but was further revalidated in Nigeria by Oladimeji (2005). The Test Anxiety Inventory (TAI) is a self-report psychometric scale which was developed to measure individual difference in test Anxiety as situation – specific trait. The instrument comprises 20 statements describing different form of test anxiety on four point scales, ranging from almost never (1), sometimes (2), often (3) and almost always (4). The highest possible score on the instrument is 80 (4 x 20), while the lowest possible score is 20 (20 x 1). Based on a modified 4-point scale, the respondents would be required to report frequently if they experience specific symptoms of anxiety before, during and after examinations. In addition to measuring individual's differences in anxiety in test situations, the TAI sub- scale assess worry and emotionality as a major component of test anxiety. Students that scored 34.37 for males and 34.37 for females and above will be included in the study.

Reliability of the Instrument

Oladimeji (2005) noted that the Pearson product moment statistical technique was used to correlate the test and retest scores under the non- examination condition. The co-efficient of reliability obtained were: 0.75, 0.79 and 0.56. for TwWA, W, TAI-E and TAI-T respectively. The worry and emotionality sub-scale scores have good and excellent internal consistency reliability among sample of secondary school and university students. For male and females, median co-efficient alpha of 0.88 and 0.90 respectively, have

been reported. Test scores stability over 2-4 weeks test - retest interval ranged from 0.80 to 0.81 for TAI (Spielberger, 1980).

Method of Data Collection

All the senior secondary school students from selected schools were given equal opportunity to participate in the study, the entry anxiety level of students was considered, using the pretest. All participants were given the Test Anxiety Inventory (TAI) and a general information questionnaire to complete. The researcher and two (2) well trained research assistants went round the selected secondary schools to distribute copies of questionnaire. The researcher gave an introductory instruction to the students on how to respond to the questionnaire according to the instruction. Each respondent was given the instrument (WTAS) to respond to the items. This enabled the researcher identify test anxious students with high level of anxiety.

Experimental Procedures

This was the procedure the researcher adopted to ensure a successful implementation of the programme of self-instruction technique. The researcher visited the schools, solicited for the cooperation of the school principals so as to build in the programme in the schools' activities. The researcher explained the purposes and benefits to be derivable from the treatment to the principals of the schools. After obtaining the permission, the researcher also got two guidance counsellors in the schools to assist in the study. The guidance counsellor introduced the researcher to the group as a guest counsellor during the period of the treatment.

Prior to the commencement of the treatment, Test Anxiety Inventory I (TAI) questionnaire were administered on the students in the experimental groups and control group. The tests were administered by the researcher assistants with the researcher monitoring the exercise, making sure that the test was taken under the same conditions and then collected the entire completed questionnaire. The treatment was designed to last for eight weeks using the normal school timetable that allocated 80 minutes for guidance and counselling. A total of eight sessions was run. The control group were exposed to conventional counselling with the school counsellors providing the services to the students with test anxiety. This also continued for eight weeks, and then the students were post-tested.

For the experimental groups, a self-instruction technique was designed to last for eight weeks. Each session started with the counsellor's introduction to the issues to be addressed in the session and samples questions to elicit students' participation in the session. After the treatment, the Test Anxiety Inventory questionnaire was re-administered to the experimental and control groups. The instrument was disguised by reshuffling before they were re-administered. This was done in the eight weeks treatment. The researcher monitored the exercise and made sure the students were under the same conditions and then, collected all completed questionnaire. The students' responses were scored and data generated was collected for statistical analysis.

Method of Data Analysis

The completed instruments were scored following the scoring instruction provided in the TAI manual. Scores that are above the Nigeria mean (34.37 for males and 34.37 for females) indicate the presence of test anxiety and score below this show no problem with test anxiety. The data relating to the research questions were analyzed using mean and analysis of covariance (ANCOVA) was used in testing the hypotheses at 0.05 levels of significance.

Results

Research Question 1

What is the difference in the pretest and posttest test anxiety mean scores of students treated with self- instruction and those received conventional counselling?

Table 1: Pretest and Posttest Test Anxiety Mean Scores Of Students Treated With Self- Instruction and Those who received Conventional Counselling

Source of Variation	N	Pretest Mean	Posttest Mean	Lost Mean	Remark
Self-instruction	35	58.09	29.29	28.80	Effective
Control	35	56.18	49.83	6.35	

Table 1 indicate that the students treated with self-instruction techniques had pretest mean score of 58.09 and posttest mean score of 29.29 with lost mean 28.80 in their test anxiety , while the students in the control group who received conventional counselling had pretest mean score of 56.18 and posttest mean score of 49.83 with lost mean 6.35. Therefore self-instruction technique is effective in reducing the students' test anxiety.

Research Question 2

What are the differences in the pretest and posttest test anxiety mean scores of male and female students treated with self- instruction technique?

Table 2: Pretest and Posttest Test Anxiety Mean Scores Of Male and Female Students Treated With Self- Instruction Technique

Source of Variation	N	Pretest Mean	Posttest Mean	Lost Mean	Remark
Male	17	57.35	29.35	28.00	
Female	18	58.78	29.22	29.56	Litter difference

Table 2 indicates that the male students treated with self-instruction had pretest mean score of 57.35 and posttest mean score of 29.35 with lost mean 28.00 in their test anxiety , while the female students in the group had pretest mean score of 58.78 and posttest mean score of 29.22 with lost mean 29.56. Therefore self-instruction is slightly more effective in reducing the female students' test anxiety than male students.

Testing of Null Hypotheses

Null Hypothesis 1

There is no significant difference in the effect of self-instruction in reducing secondary school students' test anxiety when compared with those in the control group who received conventional counselling using their mean scores.

Table 3: ANCOVA on the Test Anxiety Mean Scores of Students Treated With Self-Instruction Technique and Those who Received Conventional Counselling

Source of variation	SS	df	MS	Cal. F	Crit. F	P ≥ 0.05
Corrected Model	83610.897	2	4155.448			
Intercept	556.242	1	556.242			
Pretest Scores	925.739	1	925.739			
Treatment Models	7846.809	1	7846.809	332.67	3.99	S
Error	1580.375	67	23.588			
Total	119425.000	70				
Corrected Total	9891.271	69				

In table 3, it was observed that at 0.05 level of significance, 1df numerator and 69df denominator, the calculated F 332.67 is greater than the critical F 3.99. Therefore, the first null hypothesis is rejected. So, the effect of self-instruction in reducing secondary school students' test anxiety is significant when compared with those in the control group.

Null Hypothesis 2

There is no significant difference in the effectiveness of self-instruction in reducing secondary school students’ test anxiety of male and female students.

Table 4: ANCOVA on the Test Anxiety Mean Scores of Male And Female Students Treated With Self-Instruction Technique

Source of variation	SS	df	MS	Cal. F	Crit. F	P ≥ 0.05
Corrected Model	2.375	2	1.188			
Intercept	753.731	1	753.731			
Pretest Scores	2.226	1	2.226			
Gender	0.243	1	0.243	0.025	4.13	N S
Error	316.768	32	9.899			
Total	30337.000	35				
Corrected Total	319.143	34				

Table 4 showed that at 0.05 level of significance, 1df numerator and 34df denominator, the calculated F 0.24 is less than the critical F 4.13. Therefore, the fourth null hypothesis is accepted. So, there is no significant difference in the effectiveness of self-instruction technique in reducing test anxiety of male and female students.

Discussion of Results

The findings of this study showed that self-instruction is effective in reducing secondary school students’ test anxiety when compared to those in the control group. Specifically, the finding indicated that students in both experimental and control group possessed test anxiety before the commencement of the study as measured by their score on the pre-test. The finding also indicated that the magnitude of the mean difference between the experimental and control group was significant in the post-test.

Moreover, the experimental group reported a significantly decrease in their test anxiety than the control group. This may indicate that secondary school students in the treatment group gained a better understanding of their test anxiety as a result of receiving self-instruction technique. This finding is consistent with prior researches that suggested that self-instruction technique is effective in reducing secondary school students’ test anxiety (Ubangha, Nwadinigwe & Iyayio, 2014). One reason for decrease in students’ test anxiety in the experimental group over and above those in the control group might be due to the thought changing process in self-instruction technique. Since students might have been amazed how their thought effects their feelings and actions and as such it affected their test anxiety so much within the few weeks.

Another finding of this study is that there was no significant gender difference on the effects of self-instruction technique and relaxation technique on secondary school students’ test anxiety. In particular the decrease in test anxiety of female students was lower than that of male secondary school students after they had participated in self-instruction technique. This suggests that female students benefited more from self-instruction technique than male students did, but the difference was very insignificant for both male and female students. This finding agrees with that of Ekeruo (2009) whose result indicated that self-instruction technique had more impact on females than males. This is so because female yield themselves more easily and willingly to change. In the study, Ekeruo used self-instruction technique to reduce the test anxiety of secondary school students. She used both male and female students and discovered that test anxiety reduced more in females than males, following the treatment with self-instruction technique.

Conclusion

The study investigated the effect of self-instruction technique on reducing test anxiety among secondary school students in Anambra State. The following conclusions have been drawn from the study:

1. Self-instruction is effective in the treatment of secondary school students with test anxiety. As such, its usage should be encouraged.

2. A self-instruction technique is slightly more effective in reducing the female students test anxiety than in male students.

Recommendations

Based on the findings, the following recommendations are hereby made:

1. As the use of self-instruction has been shown to be effective in reducing secondary school students' test anxiety, it should be encouraged; practising school guidance and counsellor should learn to use the both techniques to assist students develop a less or zero test anxiety.
2. The school management should organize a workshop seminar by inviting all members of the Parents Teachers Association (P.T.A) in order to sensitize them on how to reduce the test anxiety of their wards. Through the workshop seminar, parents will be taught the interpersonal relationship skills inherent in self-instruction such as unconditional positive regard, role play, empathy and stop thought techniques.
3. The Anambra State Post Primary Schools Service Commission should provide on –the-job training to practising school guidance and counsellor on the use of self-instruction in treating test anxiety through seminar, symposia and conference.

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