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Effect of Self-Efficacy on Students Test Anxiety; Gender Based Intervention

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Abstract

TTest anxiety is performance based anxiety and has the potentials to hamper the academic development of secondary school students. It is to this effect that this study sought to examine the effect of self-efficacy technique on student's test anxiety; Gender based intervention in Enugu Education Zone of Enugu State. The study was guided by three research questions and three hypotheses. A quasi-experimental study, which adopted the pre-test- post-test non-equivalent research design, was adopted for this study. A total of 50 identified students suffering from examination anxiety were used for the study. Stratified sampling technique was employed and used to select coeducational schools within the zone. The instrument for data collection was a 21 item instrument, titled the "Examination Anxiety Scale (EAS)". The reliability of the instrument was determined using Cronbach Alpha and a reliability coefficient of 0.86 was obtained implying that the instrument is highly reliable and yielded a consistent result. The students from the two experimental groups were subjected to a pre-test using the EAS before receiving treatment self-efficacy and peer collaborative learning. After the treatment, the EAS was reshuffled and re-administered this time as the post test. Mean and standard deviation were used to answer the seven research questions generated while Analysis of Covariance (ANCOVA) was used to test the seven hypotheses. The findings of the study revealed that self-efficacy was effective in the treatment of examination anxiety. Gender was discovered not to be a significant moderating variable to examination anxiety. In light of these findings it was recommended that school counselors should adopt and use of self-efficacy technique in the treatment of test anxiety.

Keywords:

Test anxiety, Self-efficacy, Gender

Introduction

Nelson Mandela described education as the great engine of personal development. It is through education that the daughter of a peasant can become a doctor, that the son of a mineworker can become the head of the mine that a child of farm workers can become the president of a great nation. It is what we make out of what we have, not what we are given, that separates one person from another. The purpose of all human existence that has ever existed has been to educate people [1]. This assertion explains why nations of the world have and continually invested large sums of their Gross Domestic Product (GDP) into this sector. As a result the federal republic of Nigeria [FRN, 2017] in its national policy on education stated unequivocally that education in Nigeria is an instrument par excellence for causing national development. It is common for testing to be required, In order for education to be utilized for assessment, placement and certification [2].

Consequent open the fact that information generated from tests are used for a number of objectives, test play a crucial function in the educational system. Data gathered from tests are used to make important decisions such as evaluating a program of study's instructional effectiveness, [3]. Every student's life has included taking tests at some point. It's conceivable that pupils will have taken more than a thousand examinations by the time they enter first grade in elementary school and when they triumphantly hurl their caps in the air at high school graduation.[4]. Test is a specific sort of evaluation that gives students a specific set of activities to do and in order to encourage them [5]. Test is a measure to the degree to which a person has achieved"something, learned a specific skill, or mastered a particular knowledge-typically as a result of deliberate education or training [6]. Operationally a test is defined as academic exercise geared towards establishing whether a student has assimilated the instructions taught and to which extent the asimilation has taken place.

As a result of the weighty nature of testing in today's academic setting students approach this period with certain levels of anxiety [7]. The word "anxiety" comes from the Latin verb "angere," which means to choke or strangle. The sympathetic nervous system is what makes anxiety an emotional and behavioural disorder. As a result of pressure and a fear of failing, students frequently exhibit significant levels of anxiety when confronted with performance-related tasks like tests [8]. Anxiety is a Physiological and psychological phenomenon in which a person is under intense stress and worry, before, during or while taking a test [8]. Anxiety as psychological term that is typically used to describe a mood of dread, an irrational fear that is only loosely connected to an object [4,9].The body's signal that something in the environment requires attention is anxiety. Basically, it involves a number of biochemical adjustments to your brain and body, including a rise in adrenaline (which causes your heart to beat more quickly) and a fall in dopamine (a brain chemical that helps to block pain). These modifications lead to an increased awareness of the anxiety's root cause.

Test anxiety is a form of performance anxiety; anybody can be affected by it, from basic school, pupils to PhD candidates. Before taking an exam, the majority of individuals experience some level of worry or anxiety. Test anxiety, on the other hand, is when this anguish

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escalates to the point that it hinders performance of the student. Test anxiety as a psychological condition in which people experience extreme distress and anxiety in testing situations [10]. Operationally test anxiety is defined as the feeling of unrest, unease and worry as a result an assessment situation. The negative effects of test anxiety on students' academic progress and life satisfactioon have been widely studied in literatures [11].

Test, anxiety is mainly thought of as context-specific and includes "negative physiological, affective, and cognitive responses to a test or assessment, where symptoms like rapid breathing and heart rate, as well as worry about performing poorly, occur before, during, or after an assessed performance [12]. Studies, show, that between 25% and 40% of students experience test anxiety [13,14]. Research has revealed a number of variables that may be used to predict students' test anxiety, such as poor academic performance, teacher characteristics, the design of examinations, and parental, peer, and teacher pressure, low, self-efficacy and sociodemographic factors among others [15,16]. Research showed that the feeling of threat associated with test increases when these characteristics are present [17].

In addition to academic pressure on students that may cause test anxiety, the skills deficiency model is a significant theory that helps explain test anxiety [18].This examines the abilities that pupils have that may affect their self-assurance when taking tests. Students who lack these abilities may experience test anxiety. Teachers and educational experts are very interested in pinpointing and enhancing those aspects of students that most significantly affect academic success since students must deal with on-going test, anxiety. Self-efficacy beliefs have been noted as a key predictor of academic performance in addition to intellectual aptitude [19].

The key to success is confidence. A person can be supported even under challenging circumstances if they have faith in their own abilities. This confidence or believe in self, is termed self-efficacy in behavioural sciences. Self-efficacy can be extrapolated to mean self-assurance, self-reliance, and trust in oneself. Self-efficacy is the confidence that one can develop the ability to handle challenging or novel tasks, and the capacity to adapt to changes in performance [20]. Self-efficacy is the conviction that one can succeed in a task or subject [21]. Self-efficacy is the term for students' attitudes and ideas about their potential for academic success, as well as their confidence in their capacity to complete academic tasks and successfully learn the subject [22]. Four mechanisms contribute to the development of self-efficacy. The first is mastery experiences, which describes learning by overcoming difficulties such as a challenging homework assignment. Social modelling, or having role models, is the second. This refers to observing someone who are similar to oneself (for instance, someone who is the same age, ethnicity, or gender) succeeding in a particular field. The third strategy is social persuasion, which encourages people to stay determined and gauge success by making personal progress. Even though it is not required for a possible role model to be familiar with all of a student's identities. The final mechanism is emotional state, such as management of anxiety [9].

Because self-efficacy allows students to develop coping mechanisms that could thwart test anxiety, we hypothesize that students with high self-efficacy will also have low test anxiety. Self-efficacy has a significant negative relationship with test anxiety [20]. Low self-efficacy is a purveyor of strong test anxiety [31]. Self-efficacy had a negative relationship with test anxiety implying that self-efficacy has the capacity to eliminate test anxiety [23]. Gender offers an interesting angle to this discussion of self-efficacy and test anxiety. Studies in this area is relatively preliminary, student demographic factors including gender, age, and the educational level of parents may have an impact on students' test anxiety [24].

According to the State-Trait hypothesis, worry and emotionality define the sort of test anxiety; hence gender appears to be a key role in test anxiety and stress. In other words, thinking patterns may influence how a person perceives and responds to others and events and these cognitions may differ between genders [25, 26]. Gender differences are significant where female Masters' students showed a significantly higher level of test anxiety than their male counterparts [27]. Gender was a significant factor in influencing test anxiety [28].

Previous studies have reported conflicting results on the influence of gender on test anxiety and the predictive power of self-efficacy on test anxiety. The current study aims to discover the effect of self-efficacy on students test anxiety and the influence of gender on test anxiety.

Methodology

Design

The study adopted the pretest-posttest design comprising of the treatment group and the conventional group.

Ethical Consideration

The current study followed the research ethics of the American Psychological Association.

Research Question

1. What is the effect of self-efficacy technique on test anxiety among students?
2. What is the influence of gender on students test anxiety?
3. What is the interaction effect of gender on self-efficacy technique and test anxiety?

Participants

Eighteen students constitute the sample size of this study. Stratified random sampling technique was used to select a school within the research area. simple random sampling technique was used to assign an intact class into the experimental and control groups, based on the condition that the selected classes are of the same stream, that is to say if experimental group 1 is an Art class all the other groups would be Art classes. With the help of the school counsellors, the researcher administered the pre-test and identified eighteen (18) students suffering from test anxiety

Instrument for Data collection

The instrument to be used for the study is Examination Anxiety Scale (EAS). The researcher adopted the Examination Anxiety Scale by Abbasi and Ghosh (2020). The instrument for Examination Anxiety is a twenty one (21) item instrument that consists of two sections. Section A will be used for collection of student's demographic information. While the section B would be used in determining their levels of agreement or disagreement with the statement on the instrument in relation to Examination Anxiety. The EAS will be structured on a four point likert scale and will be graded as: Strongly Agree (SA), 4 points, Agree (A) 3 points, Disagree (D) 2 points, Strongly Disagree (SD) 1 point. The EAS would initially be administered to the students as pre-test and later reshuffled and administered as post-test.

Table 1: Mean and standard deviation of examination anxiety scores of students exposed to self-efficacy technique and those not exposed to the technique

	Pre test			Post-test-test		
	N	$\bar{x}$	SD	$\bar{x}$	SD	Mean difference
Treatment group	18	56.33	7.08	43.06	2.29	13.27
Non treatment group	11	55.27	8.59	46.00	4.96	9.27
Gender						
Male	8	55.50	7.05	46.18	5.06	9.32
Female	10	55.43	6.68	46.19	4.86	9.24

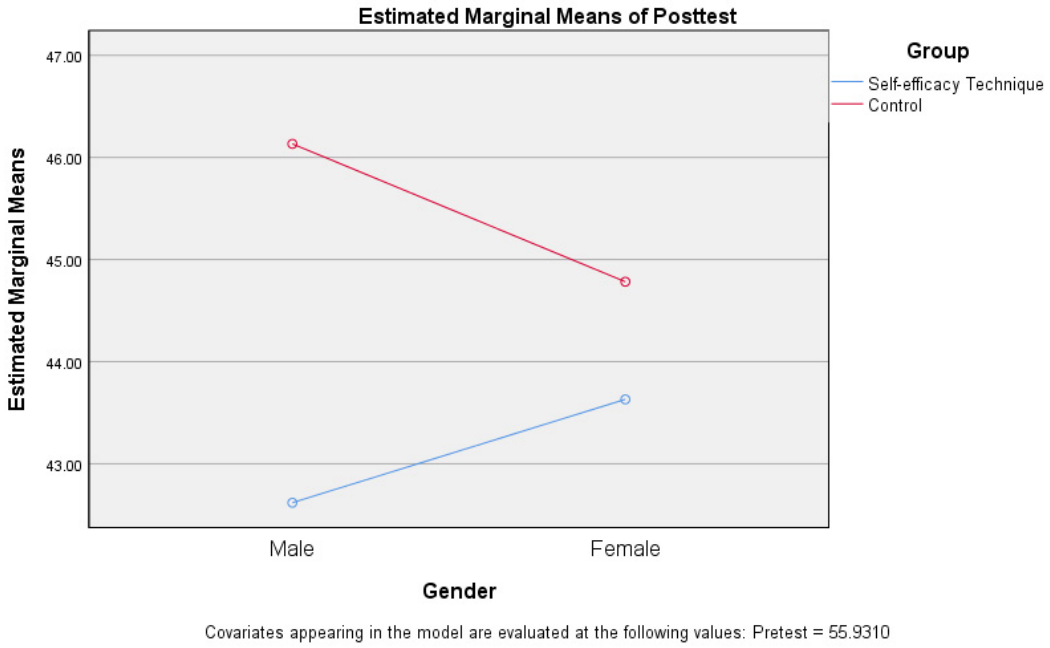

Figure 1: Graph showing the interaction effect of gender on self-efficacy technique and the mean test q anxiety scores of students.

Results

What is the effect of self-efficacy technique on test anxiety among students?

The data in (Table 1, Figure 1) shows the pre-test and post-test mean examination anxiety scores of students exposed to self-efficacy technique (treatment) and those in the conventional group. The result shows that students exposed to self-efficacy technique (experimental group A) had a pre-test mean examination anxiety score of 56.33 with a standard deviation of 7.08 and a post-test mean of 43.06 with a standard deviation of 46.00. The mean difference between the pre-test and post-test means was 13.27. Whereas, those who were in the conventional group had a pre-test mean examination anxiety score of 55.27 with a standard deviation of 8.59 and a post-test mean of 46.00 with a standard deviation of 4.96. The mean difference between the pre-test and post-test means of the conventional group was 9.27. For both groups, self-efficacy technique had a higher mean difference score on examination anxiety than those in the conventional group. The post-test standard deviation of 2.29 and 4.96 for the experimental and conventional groups respectively indicate that the technique brought the experimental group closer, as the individual ratings were less varied than that of the conventional group. Therefore, it implies that self-efficacy technique was effective in decreasing students test anxiety. The result shows that the pretest means examination anxiety scores of male students who participated in the study was 55.50 with a standard deviation of 7.05 while the posttest mean was 46.18 with a standard deviation of 5.06. The mean difference between the pretest and posttest means was 9.32. Meanwhile, the pretest means examination anxiety score of female students was 55.43 with a standard deviation of 6.68 and a posttest means of 46.19 with a standard deviation of 4.86. The mean difference between the pretest and posttest means was 9.24. The result is close, which implies that gender had no influence on examination anxiety of students.

Discussion

The researchers sought to determine the effect of self-efficacy training on students test anxiety, a gender based intervention. The researchers decided to do a thorough background study on the variables pertaining to the study. Gender was also studied and its impact established on students test anxiety. The findings of the study revealed that students who were exposed to self-efficacy technique had a higher mean difference score than those in the conventional group. This implies that self-efficacy technique was effective in reducing test anxiety among students. The findings of the

current study are in line with the findings of the previous studies. The study lent credence to the findings of the study conducted on self-efficacy and test anxiety which reported that self-efficacy had a significant negative relationship with test anxiety and is effective in reducing examination anxiety [20]. Similarly the finding of the study is consonance with the findings of [29] who reported that self-efficacy had a significant negative relationship with examination anxiety and is effective in reducing test anxiety. The finding also supports the findings [26,30], their study reported students with low level of self-efficacy suffered from high levels of examination anxiety and that the negative correlation between test anxiety and self-efficacy are well established.

There was no significant influence of gender on mean test anxiety scores of students. Compared with 0.05 set as the level of significance, was found not significant. The finding of the study supports the findings of [20] which reported that gender was not a significant moderator of test anxiety [31]. Collaborated the finding of this study with the result of their study which reported that the interaction effect of peer collaborative learning strategy and gender on the self-efficacy belief of pupils with ODD is not significant. However the finding of the study is in variance with the findings of [21] which reported a positive influence of gender and mode of study having significant influence on test anxiety of undergraduate students. In this study it was discovered that both male and female students exposed to self-efficacy technique had a post-test mean examination anxiety scores that were less than their pre-test means score. However, female students had slightly higher mean test anxiety scores when using self-efficacy technique than their male counterparts. This suggests that self-efficacy technique is effective in reducing test anxiety of male and female students who benefitted from the treatment.

The Analysis of covariance (ANCOVA) conducted reported that there was no significant moderating effect of gender on the effect of self-efficacy technique on mean examination anxiety scores. The observed F-ratio of 0.568 with an associated or exact probability value of 0.459 was obtained for the effect of self-efficacy technique on the mean examination anxiety scores as moderated by gender. Since the associated or exact probability value of 0.459, when compared with 0.05 set as the level of significance, was found not significant because it is greater. This finding also lent credence to the findings of [29] which reported that gender was not a significant moderator of examination anxiety. The possible explanation for this could be that the environment in which we live is evolving, and both the socialization of male and female gender is changing drastically. In the academic setting, only those who score over established boundaries get admitted, despite the fact that women still generally have lesser status and are socialized to be weak, dependent on men.

Conclusion

Students who were exposed to self-efficacy technique had a higher mean difference score than those in the conventional group. This implies that self-efficacy technique was effective in reducing examination anxiety among students. Consequent upon these findings it is recommended that school counsellors should adopt and use of self-efficacy technique in the treatment of test anxiety. Since it has been proven that it is effective in the treatment of anxiety. Having proven that gender has no significant influence on examination anxiety. Counsellors and school psychologist should eliminate all forms of bias in regards to gender in the application of the treatment.

Data Availability

All data used to conduct the study and the intervention program used for treatment is available on demand.

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