



EFFECTIVENESS OF COGNITIVE RESTRUCTURING ON PRIMARY SCHOOL

PUPIL'S EXAMINATION ANXIETY IN KWARA STATE, NIGERIA

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Abstract

Assessment is an integral part of any curriculum and the primary source of the any assessment is mostly examination however evidence and indications has shown that pupils often experience anxiety toward examination or during examination also pupils experience fear when speaking among their peers or even to a larger audience. Hence, this study investigates the effectiveness of cognitive restructuring on examination anxiety among primary school pupils in Kwara State, Nigeria, with gender and school type as moderating variables. The research is rooted in the observation that despite various academic and extracurricular activities, many pupils experience significant examination anxiety, negatively impacting their performance. Utilizing a pre-test, post-test, non-randomized, and non-equivalent control group quasi-experimental design, the study involved 57 primary five pupils selected through a multi-stage sampling technique. Instruments such as the Examination Anxiety Inventory (EAI) and a cognitive restructuring package were validated and tested for reliability, yielding reliability indexes of 0.79 and 0.80, respectively. The study's findings reveal that cognitive restructuring significantly reduces examination anxiety among primary school pupils ($F(1, 55) = 652.623, P < 0.05$). However, no significant effects were found concerning gender or school type, nor were there significant interaction effects among cognitive restructuring, gender, and school type. These results suggest that cognitive restructuring is an effective intervention for managing examination anxiety in primary school pupils, regardless of gender or school type.

Introduction

The classroom is a subset of the school where teaching and learning take place between teachers and pupils. Various activities such as reading, writing, arithmetic, and others take place in the classroom. Beyond the classroom, pupils are also involved in extracurricular activities such as sporting activities, games, debate, public speaking and many others. At the end of each term, pupils are being tested using a different form of assessment technique which in most cases could be examination. Despite the classroom and extracurricular activities that pupils are exposed to, it has been observed by classroom teachers that pupils often have examination anxiety.

Anxiety in pupils could be one of the most widely experienced emotions in individuals and could also be one of the most important constructs of all human behaviour. According to Das, Halder and Mishra (2014), anxiety is a complex psychological situation that has an impact on cognitive, behavioural and psychological states. Anxiety in some cases could be described as a manifestation of feelings of restlessness, nervousness, worry, fear, or unpleasant feelings. Additionally, anxiety can be experienced by people of various age groups in their daily lives (Shakir, 2014). Similarly, anxiety can be experienced by everyone without exception and also experienced by pupils at school. The anxiety faced by pupils at school is often referred to as academic anxiety (Hooda & Saini, 2017). Academic anxiety is a type of anxiety related to impending danger from the environment of academic institutions including teachers in certain subjects such as Mathematics, English, Science and others (Mahato & Jangir, 2012). When the anxiety felt by the pupils becomes excessive, it will have a negative effect which causes pupils to experience psychological pressure thereby leading to poor learning outcomes (Hooda & Saini, 2017). Academic anxiety if not properly handled could lead to examination anxiety among primary school pupils.

Examination anxiety in some cases referred to test anxiety is a state of uneasiness, worry or feelings of uncertainty about an impending or ongoing evaluation programme (Newton, 2015). Examination anxiety is a type of performance anxiety (Malhotra, 2015) where pupils could feel pressured to perform excellently and become so worried about whether they will be able to perform or not. It could be inferred that it is not examination per se that elicits anxiety, but rather the fear of its negative outcome in terms of performance. Works of literature have revealed three distinct levels of examination anxiety among test takers: low, moderate and high anxiety levels. However, differences exist in the estimations of these levels marginally due to the nature of self-reports used in such estimations. In the first place, research by Hamzah et al., (2018) established that a low level of examination anxiety is a great disservice to examinees as it demotivates them in terms of examination preparations while moderate anxiety levels in test takers is helpful in their preparations to face impending examinations as it is often helpful for them to stay mentally and physically alert. Such pupils, to a large extent, perform better in examinations as there is limited interference by negative thoughts and emotions before the examination (Bentil, 2020).

In a related study, Cherry (2012) concluded that pupils with a moderate level of examination anxiety can perform relatively well on examinations. Likewise, Salend (2012) noticed that appropriate levels of examination anxiety heighten pupils' memory, attention, and motivation for learning. The debilitating consequences of test anxiety include attrition amongst pupils, pupils being usually tensed, apprehensiveness, nervousness and emotional arousal which ultimately results in poor academic performance. While the above studies recount the devastating outcomes of test anxiety, Salend (2011) noticed that appropriate levels of anxiety can enhance pupils' memory, attention, and motivation, and lead to improved test performance. Implicitly, when anxiety points exceed appropriate levels, it can have devastating effects on academic performance.

Consequently, available literature has disclosed that research on test anxiety and its impact on pupils' academic performance has received considerable attention in recent decades and results are inconclusive. For instance, previous studies (Barrows et al., 2013; Steinmayr, Crede&Wirthwein, 2016; & Duty, et al., 2016) have all discovered that test anxiety negatively affects pupils' academic performance. These findings suggest that examination anxiety is negatively correlated with academic performance among pupils. However, findings from Afolayan et al., (2013) revealed that there was no significant relationship between test anxiety and pupils' academic performance.

The symptoms of examination anxiety range from moderate to severe anxiety. Various factors in literature have been blamed as instigators of examination anxiety among pupils. They include individual factors, school factors and parental factors (Patil &Aithala, 2017). The individual factors that could cause examination anxiety among pupils in primary schools are those factors that are personal to the pupil himself. It has to do with student's style of studying, negative and irrational thinking about exams, the outcome of inadequate rest, insufficient physical activity and class attendance (Nelson & Harwood, 2011). According to Oruche (2011), pupils' attitude to learning and attention in class results in exam anxiety. However, the extent to which these individual factors result in examination anxiety among primary school pupils to the best of the researcher's knowledge has not been empirically proven. According to Nelson and Harwood (2011) school infrastructure and procedures could cause examination anxiety among pupils. Nelson and Harwood noted that inadequate lighting in the classrooms, lack of adequate reading areas, teachers' ability to motivate pupils and the school curriculum seem to be so. From the literature so far, it is clear that examination anxiety is prevalent among basic school pupils and it exists in levels. It could also be established that pupils experience anticipatory examinations. However, the current literature is limited in providing empirical evidence on the levels of examination anxiety and how to solve the issue among primary school pupils.

In educational psychology, there are a considerable number of interventions to reduce anxiety levels among pupils and, at the same time, increase their academic achievement. One of these interventions is cognitive restructuring (Motevalli et al., 2020), which is a learning process to disprove cognitive distortions or the fundamentals of 'faulty thinking' to replace one's irrational, counter-factual beliefs with more accurate and profitable ones (Motevalli et al., 2021). However, it is remarkable to consider that cognitive restructuring does not entirely mention the reorganization of irrational thoughts in the brain. The ongoing restructuring of thoughts is directly related to some terms such as adaptation, accommodation, and structure of knowledge and rational thoughts. Cognitive restructuring is a psycho-therapeutic and systematic learning strategy that helps clients identify and dispute cognitive distortions. It is basically designed to help an individual identify and change negative thought pattern and beliefs that contribute to the emotional distress, maladaptive behavior and psychological issues.

Cognitive restructuring was originally developed by Albert Ellis and Aaron Beck. Aderanti and Hassan (2011) reported that Cognitive restructuring has been used successfully to treat a wide variety of conditions, including depression, Post-Traumatic Stress Disorder (PTSD), addictions, anxiety, social phobias, relationship issues, and stress. Similarly, Eifediyi (2015) found that there was a significant effect of cognitive restructuring in the reduction of examination anxiety of students. Furthermore, Uyigue (2016) reported that cognitive restructuring was effective in managing adolescents with anxiety disorders in secondary schools. The Cognitive Restructuring theory asserts that humans are directly responsible for generating their own negative emotions and that these self-created negative emotions, over time, lead to dysfunctions, such as stress, depression, anxiety, and even social awkwardness.

In this study, Gender and school type were considered as moderating variables. Gender seems to be one of the moderating variables that usually attract the attention of researchers when considering possible intervening variables in a research study. UNESCO (2003) defined gender as the roles and responsibilities of men and women as created in our families, societies and cultures. This concept of gender further extends to the expectations held about the characteristics, aptitudes and likely behaviour of both males and females. These observed and perceived differences in male and female's characteristics, attitudes and behaviour seem to have warranted the inclusion of gender as a variable in the design of research studies. Individual's physiological reactions to evaluation situation seem to be one of such areas in which gender differences is conspicuously observed. Studies such as Ekwelundu (2022) and Afolabi-Ige (2016) have reported gender difference in Examination anxiety. However, inconsistency is observed in various findings on gender differences as regard Examination anxiety. While researchers such as Oguzie (2023), Ekwelundu (2022) and Afolabi-Ige (2016) reported that female participants recorded higher scores than their male counterparts on self-report measure of examination anxiety, Yahaya and Nasiru (2023) study's results revealed that cognitive restructuring successfully decreased chemistry anxiety among students, with no notable disparity in efficacy between male and female students. School type is another variable to be considered when examining the levels of examination anxiety among pupils. In a study by Gupta (2020), it was found that there is a significant difference between the levels of examination anxiety in students from public and private schools. However, hypothesis testing by Martínez (2021) revealed no significant difference in examination anxiety between students from private and public schools. This finding suggests that other factors might be more influential in determining examination anxiety levels. The researcher deemed fit to apply cognitive restructuring on primary school pupils since much of the attention of the previous researchers was concentrated on either secondary school or university students. This study, therefore, investigated the effectiveness of cognitive restructuring on primary school pupil's examination anxiety in Kwara State, Nigeria.

Statement of the Problem

The importance of examinations in determining pupils' academic performance and educational attainment cannot be overstated. Despite the critical role of exam scores in decision-making, decisions based on these scores often fail to accurately reflect pupils' true academic abilities. Experience has shown that many pupils perform below their potential due to various inherent factors that impede their optimal cognitive functioning. Notably, examination phobia is a significant factor that inhibits individual performance during evaluations.

Given these observations, it is crucial to address the limited research attention devoted to these issues. This study is therefore essential and unique, as no prior research has been conducted in Kwara State, Nigeria, to examine the effectiveness of cognitive restructuring in managing examination anxiety among primary school pupils. By addressing these critical issues, the research seeks to create a paradigm shift in how educational success is measured and supported, ensuring that pupils' mental health and emotional well-being are considered alongside their academic achievements. This holistic approach could lead to more resilient, confident, and well-rounded individuals who are better equipped to face the challenges of the future.

Research Hypotheses

The following null hypotheses are formulated:

H₀₁: There is no significant effect of cognitive restructuring on pupils' examination anxiety in Kwara state.

H₀₂: There is no significant effect of cognitive restructuring on pupils' examination anxiety based on gender.

H03: There is no significant effect of cognitive restructuring on pupils' examination anxiety based on school type.

H04: There is no significant interaction effect of cognitive restructuring, gender, and school type on pupils' examination anxiety.

Methodology

The researcher employed a pre-test, post-test, non-randomized, and non-equivalent control group quasi-experimental design to examine the effectiveness of cognitive restructuring on primary school pupils' examination anxiety in Kwara State. A 3x2x2 factorial design was used, considering experimental groups (examination anxiety, fear of public speaking, and a control group), gender (male and female), and school type (public and private). The study focused on 57 primary five pupils selected from two local governments using a multi-stage sampling technique, which included simple random sampling, stratified sampling, and purposive sampling. The instruments used Examination Anxiety Inventory (EAI) and a cognitive restructuring package were validated by experts from the Department of Early Childhood and Primary Education, as well as lecturers at Faculty of Education, Kwara State University, Malete. These instruments were tested for reliability, yielding reliability indexes of 0.79 and 0.80. Data were analysed using descriptive statistics for demographic information and Analysis of Covariance (ANCOVA) to assess group differences, with a significance level set at 0.05.

Results

Research Hypothesis One: There is no significant main effect of cognitive restructuring on primary school pupils' examinational anxiety.

Table 1: Showing summary of Analysis of Co-variance (ANCOVA) on effect of cognitive restructuring on primary school pupils' examinational anxiety in kwara state

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	8741.205 ^a	8	1092.651	128.999	.000
Intercept	209.828	1	209.828	24.772	.000
Pretest	.945	1	.945	.112	.740
Main effect					
Treatment	5527.877	1	5527.877	652.623	.000
Gender	.143	1	.143	.017	.897
School type	14.195	1	14.195	1.676	.202
Two way interaction					
Treatment Gender	54.536	1	54.536	6.439	.061
Treatment School Type	42.347	1	42.347	4.999	.130
Gender School type					
Three way interaction	.126	1	.126	.015	.904
Treatment Gender School type	20.590	1	20.590	2.431	.126
Error	389.631	46	8.470		
Total	92552.000	55			
Corrected Total	9130.836	54			

Table 1 shows the effect of cognitive restructuring on primary school pupils’ examinational anxiety ($F_{(1;55)} = 652.623, P < 0.05$). The hypothesis is therefore rejected in the light of the result since the significant value (.000) is less than 0.05. This implies that treatment had significant effect on primary school pupils’ examinational anxiety.

Table 2: Summary of Bonferroni’s Post Hoc pairwise Comparison of the scores within the two Groups

Treatment	Mean Score	Experimental 1	Control Group 2
Cognitive restructuring (Examinational Anxiety)	50.928		
Conventional Method	24.826		

Table 2 reveals that the significant main effect exposed by table 4 is as a result of the significant difference between: Cognitive restructuring (Examinational Anxiety) and Conventional Method. This implies that those taught with Cognitive restructuring (Examinational Anxiety) performed better (50.928) than those taught with conventional method (24.826).

Research Hypothesis Two: There is no significant effect of cognitive restructuring on primary school pupils’ examinational anxiety based on gender. Table 1 also reveals the effect of cognitive restructuring on primary school pupils’ examinational anxiety based on gender. There was no significant effect of cognitive restructuring on primary school pupils’ examinational anxiety based on gender ($F=6.439; P > 0.05$). The hypothesis is therefore not rejected in the light of the result since the significant value (.061) is greater than 0.05. This implies that gender had no significant effect on primary school pupils’ examinational anxiety.

Research Hypothesis Three: There is no significant effect of cognitive restructuring on primary school pupils’ examinational anxiety based on school type. Table 1 also reveals the effect of cognitive restructuring on primary school pupils’ examinational anxiety based on school type. There is no significant effect of cognitive restructuring on primary school pupils’ examinational anxiety based on school type ($F_{(1;55)} = 4.999; P > 0.05$). The hypothesis is therefore not rejected in the light of the result since the significant value (.130) is greater than 0.05. This implies that school-type had no significant effect on primary school pupils’ examinational anxiety.

Research Hypothesis Four: There is no significant interaction effect of cognitive restructuring, gender and school type on primary school pupils’ examinational anxiety. Table 1 also shows the interaction effect of cognitive restructuring, gender and school type on primary school pupils’ examinational anxiety. There was no significant interaction effect of cognitive restructuring, gender and school type on primary school pupils’ examinational anxiety ($F= 2.431; P > 0.05$).

The hypothesis is therefore not rejected in the light of the result since the significant value (.126) is greater than 0.05. This implies that cognitive restructuring, gender and school type had no significant effect on primary school pupils’ examinational anxiety.

Discussion of Findings

The first finding indicated that there was a significant effect of cognitive restructuring on primary school pupils' examination anxiety in Kwara State ($F(1, 55) = 652.623, P < 0.05$). This implies that the intervention effectively reduced examination anxiety among the pupils. Cognitive restructuring, a form of cognitive-behavioral therapy (CBT), helps individuals identify and challenge irrational or maladaptive thoughts, thereby altering their emotional responses. In the context of primary school pupils, this technique can help them manage their anxiety by rethinking negative thoughts about exams. Recent research supports this finding. A meta-analysis by McMullen et al. (2022) highlighted the effectiveness of CBT in reducing test anxiety among students, emphasizing that cognitive restructuring is a critical component in addressing examination stress. Additionally, a study by Ramsay and Rostain (2021) found that cognitive-behavioural interventions significantly decreased anxiety levels in school-aged children, further validating the present study's results.

The second finding shows that there was no significant effect of cognitive restructuring on examination anxiety based on gender ($F(1, 55) = 6.439, P > 0.05$). This suggests that both male and female pupils benefited equally from the cognitive restructuring intervention. Gender differences in anxiety responses have been widely studied, but this result indicates that cognitive restructuring is equally effective across genders in reducing examination anxiety. This finding is consistent with recent research by Mahasneh and Al-Rawashdeh (2021), which found no significant gender differences in the effectiveness of CBT on test anxiety. It suggests that gender does not moderate the relationship between cognitive restructuring and anxiety reduction, implying that the intervention can be universally applied.

The third finding reveals that there was no significant effect of cognitive restructuring on examination anxiety based on school type ($F(1, 55) = 4.999, P > 0.05$). Whether pupils attended public or private schools did not influence the effectiveness of cognitive restructuring. This indicates that the cognitive restructuring intervention is broadly applicable across different educational settings. Research on the impact of school environment on anxiety has shown mixed results. For instance, a study by Picho and Brown (2021) highlighted that while school type can influence anxiety levels due to varying academic pressures, interventions like cognitive restructuring can mitigate these differences, providing a consistent benefit across diverse school environments.

The fourth finding indicates no significant interaction effect of cognitive restructuring, gender, and school type on examination anxiety ($F(1, 55) = 2.431, P > 0.05$). This means that the combined influence of these variables did not alter the effectiveness of cognitive restructuring. The intervention's effectiveness in reducing examination anxiety was consistent regardless of gender or school type. This finding is supported by recent meta-analytic studies like those by Dryden and Branch (2021), which suggest that CBT interventions are generally robust across different demographic and contextual variables.

Conclusion

Based on the findings, the study concluded that cognitive restructuring technique is effective in the treatment of examination anxiety among primary school pupils in Kwara.

Recommendations

In the light of these study findings, the following recommendations were made:

1. schools should integrate cognitive restructuring programs into their curriculum. This could include workshops, classroom activities, and counselling sessions focused on teaching pupils how to manage their thoughts and reduce anxiety.
2. Since cognitive restructuring was effective regardless of gender or school type, these interventions should be applied universally across different demographics. Schools should ensure that both male and female pupils, as well as those from various school types, have equal access to these interventions.

Teachers should be trained by professionals on cognitive restructuring techniques to effectively support students in managing anxiety. Providing teachers with resources and professional development opportunities will enable them to incorporate these strategies into their teaching practices.

3. There is a need for the creation of awareness on the part of the school management on the need for pupils experiencing examination anxiety to seek professional assistance irrespective of their gender and they type of school they attend. Workshops and informational sessions could be held to educate them on how to support children's emotional well-being at home.

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