Full Length Research Paper

Self-Efficacy and test anxiety as correlates of academic performance

*Nenadi U. Turia, Atiku k. B. and Attahiru Bello Usman

Department of Psychology, Ahmadu Bello University, Zaria, Nigeria. E-mail: prof.turia4@gmail.com

The study examined self-efficacy and test anxiety as correlates of academic performance among 249 undergraduate students of a university in Eastern Nigeria. General Self-efficacy Scale and Westside Test Anxiety Scale were used to assess self-efficacy and test anxiety respectively, whereas average score of students in two psychology degree courses were used to assess their academic performance. Results showed a significant positive correlation between self-efficacy and academic performance (.24, $p < .001$) and a significant negative correlation between test anxiety and academic performance (-.43, $p < .001$). Also, regression analysis showed a significant model emerged, $F_{2,246} = 31.32$, $p < .001$. Self-efficacy significantly predicted the variability in academic performance $ß = .151$, $p < .01$, and equally, test anxiety proves to be a significant predictor of the variability in academic performance, $ß = -.390$, $p < .001$. Given the observed high correlation between self-efficacy and test anxiety in academic performance, the author is concerned that the observed high prevalence of examination fraud in Nigeria may not be unconnected with students' low appraisal of their capability in academic context, and therefore recommends programs that will facilitate gains in self-efficacy as well as confident posture in approaching examinations.

Keywords: Self-efficacy, test anxiety, academic performance, university students, Nigeria.

INTRODUCTION

One of the major variables that measure an individual's success or failure in academic or school activities is academic performance. The target of every educational program is to ensure that the pupils/students achieve a satisfactory outcome (good performance). Various variables are known to influence academic performance; consequently, educational researchers and other allied disciplines are usually interested in such variables. Recently, there is focus on the student's sense of self as a principal component of academic performance (Pajares and Schunk, 2001). Parjares and Schunk asserted that this focus is grounded on the taken for granted assumption that the beliefs that students create, develop and hold to be true about themselves are vital forces in their success or failures in school. As noted by Bandura (1977), individuals create and develop self-perceptions of capability that become instrumental to the goals they pursue and to the control they exercise over their environments. Bandura (1986) further proposed a view of human functioning that emphasized the role of self-referent belief, which stated that individuals are proactive and self-regulating rather than reactive and controlled by biological or environmental forces. Individuals are under-

stood to possess self-belief that enables them to exercise a measure of control over their thoughts, feelings, and actions.

A definition of self-efficacy by Bandura (1997) stated that it is the beliefs in one's own capacity to organize and execute the courses of action required to manage prospective situation. Studies show that one's own beliefs of efficacy function as an important determinant of motivation, affect, thought and action (Bandura, 1992). Social cognitive theory of Bandura also proposed that self-efficacy beliefs influence the choices people make and the courses of action they pursue. Pajares and Schunk (2001) indicated that individuals tend to engage in tasks about which they feel competent and confident, and avoid those in which they feel incompetent. Multon, Brown and Lent (1991) in a meta-analysis found that self-efficacy beliefs are positively related to and influence academic performance. Other studies that found positive relationship between self-efficacy and academic performance include: Pajares et al. (1999) and Pajares and Valiante (1997). Generally, people with high self-efficacy approach difficult tasks as challenges to be mastered rather than as threats to be avoided. Therefore,

efficacy belief in one's academic capability is a critical component of school success.

Test anxiety is another important variable often related to academic performance. Anxiety is an unpleasant emotion experienced as dread, scare, alarm, fright, trepidation, horror or panic (Lewis, 1970). Test anxiety implies the debilitating experiences of anxiety as described by Lewis, during the preparation for a test or during the test itself (Jing, 2007). Minimal amount of anxiety can mobilize human beings to respond rapidly and efficiently, but excessive amount of anxiety may foster poor response and sometimes inhibit response (Simpson et al., 1995). Test anxiety makes it hard for students to concentrate on test and perform adequately. Chapell et al (2005) showed that test anxiety has negative correlation with academic performance. Similarly, Cassady and Johnson (2002) and Jing (2007), found that test anxiety is negatively correlated with academic performance. The origin of test anxiety is often explained with interference model; this model postulates that during test, students with test anxiety focus on task irrelevant stimuli, which negatively affect the performance (Sarason, 1975). Sarason further noted that this interference could be classified into physical distraction, such as increase in awareness of heightened autonomic activity and inappropriate cognitions.

The aim of the present study is to investigate to what extent the variability in academic performance of the participants is attributable to self-efficacy and test anxiety.

Studies had been done on the related issue round the globe, but the present study is focused on a Nigerian sample. The study will add to the existing literature on the issue and will also have implications for educationists, counselors and therapists who work in school setting. It is expected that the two independent variables (self-efficacy and test anxiety) will predict the variability in academic performance of the participants. This is expected, given that for one to be able to accomplish a task effectively, one has to consider oneself as capable of performing the task, and at the same time feel calm in attending to the task.

METHOD

Participants

The participants for the study are based on a sample of two hundred and forty nine (249) final year students of Combined Social Sciences and Psychology majors of a University in Eastern Nigeria, who enrolled for two psychology final year courses. They included 100 male students and 149 female students. Their age range was 23 to 30 with an average of 25 years.

Instruments

Two measures: General Self-efficacy Scale (Jerusalem and Schwarzer, 1992) and Westside test Anxiety Scale (Driscoll, 2007) was used to collect data for self-efficacy and test anxiety respectively. The General Self-efficacy Scale was developed to assess a general sense of perceived self-efficacy with the aim to predict coping with daily hassles as well as adaptation after experiencing all kinds of stressful life events. It contains 10 items and responses are made on a 4-point scale ranging from 1 - not at all true to 4 - exactly true. Some of the items include: I can always manage to solve difficult problems if I try hard enough; I am confident that I could deal efficiently with unexpected events, etc. It is a unidimensional scale and the author found the Cronbach alphas in many nations to be from .76 to .90. Schwarzer, et al. (1997) found a discriminant validity of -.52 and -.60 by correlating the scale with depression scale by Zerssen (1976) and Anxiety scale by Spielberger (1983), respectively.

Westside Test Anxiety Scale is an extremely brief screening instrument meant to identify students with anxiety impairment. It contains ten items, which are in a five-point scale ranging from 1- not at all true to 5 - extremely true. Some of the items include: the closer I am to a major exam, the harder it is for me to concentrate on the material; when I study, I worry that I will not remember the material on the exam, etc. The author showed the utility of the scale to predict test anxiety in a study of test anxious students who were divided into intervention and control groups (Driscoll, 2007). In the study, Driscoll gave intervention group anxiety-reduction training. Anxiety reduction benefits, as measured by the Westside scale, correlated an average of .44 with the test gain, indicating that changes in the Westside scale accounted for 20% of the changes in test. Onyeizugbo (2008) found an alpha of .78, split half reliability of .77 and a concurrent validity of .51, p<. 001, by correlating the scale with trait anxiety (Spielberger, 1983).

Procedure

All the participants in this study were final year students who enrolled for two of the courses required for degree examinations. The measures were administered during their last lecture, one week to the examinations. All the 249 copies of the questionnaire administered were returned and properly scored. The participants' academic performances were obtained from their average score (G.P.A) in the two courses.

Design/statistics

The design of the study is ex-post-facto. Regression analysis as well as Pearson r was used for data analysis.

RESULTS

The result showed a positive correlation between self-efficacy and academic performance (.24, p <. 001). There was a negative correlation between test anxiety and academic performance (-.43, p <. 001).

Further analysis using linear regression shows that using the enter method, a significant model emerged $F_{2,246} = 31.32$, p<. 001. Adjusted R square =196. The two independent variables were significant as shown in table1

Table 1. Regression analysis summary showing the contributions of self-efficacy and test anxiety in academic performance

Predictor variable	Standardized coefficients Beta	Significant
Self-efficacy	.151	**
Test anxiety	-390	***

** = P<. 01, *** = p<. 001.

DISCUSSION

The findings presented indicate that self-efficacy positively correlated with G.P.A and that 16% of the variability in G.P.A was predictable on the basis of participants' self-efficacy. The finding is concordance with the studies by Multon et al., (1991); Pajares and Valiante (1997); Pajares et al. (1999), and Jing (2007). They all found that self-efficacy has a significantly positive correlation with G.P.A. It further agrees with Bandura's social cognitive theory, that self-efficacy influence the choices people make and the courses of action they pursue. Self-efficacy belief exercises a powerful influence on the level of accomplishment that an individual ultimately realizes. Many students have difficulty in school not because they are incapable of performing successfully but because they have come to believe that they cannot perform successfully. This is particularly true in Nigeria, where prevalence of examination fraud is quite high and students have lost the sense of self-accomplishment, and rely heavily on "crutches" to write and pass their examinations. Thus, they have learned to see themselves as incapable of handling academic works. Therefore interventions for such students may include ways of improving their self-beliefs (Ozur and Bandura, 1990). Group psychotherapy sessions may be organized for students with low self-efficacy as part of their orientations to new academic environment.

It was further found that test anxiety is negatively correlated with G.P.A., and that 39% of the variability in the G.P.A was predictable on the basis of test anxiety. This finding agrees with the studies by Cassady and Johnson (2002), and Jing (2007). These researchers found that test anxiety had a significantly negative correlation with G.P.A. Students who have test anxiety may experience any of the following; the association of grade with personal worth, feeling of loss of control; sweating, dizziness, headaches, racing of heartbeat, and fidgeting, may also be present. When the anxiety or level of arousal exceeds optimum, it results in a decline in performance. As postulated by Sarason (1975) interference model, increased awareness of distraction by individuals with test anxiety, which may be characterized by muscle tension, headaches, fidgeting, etc., may lead to low concentration and coordination during examination and thus may result to low academic performance.

Finally, students' academic failures in school subjects can be attributed to the beliefs that the students develop about themselves and about their ability to exercise a measure of control over their environment. There may be some level of co-linearity between the independent variables in predicting the variability in academic performance, however this is beyond the scope of the present study, therefore, and future study can explore this detail.

REFERENCES

Bandura A (1977). Self-efficacy: towards a unifying theory of behavioral change. Psychol. Rev. 84:191-215.

Bandura A (1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, NJ: Prentice Hall.

Bandura A (1992). Exercise of personal agency through the self – efficacy mechanism. In R. Schwarzer (Ed.) Self – efficacy: thought control of action. Berlin: Taylor & Francis.

Bandura A (1997). Self-efficacy: the exercise of control. New York: Freeman.

Cassady JC, Johnson RE (2002). Cognitive test anxiety and academic performance. Contemp. Educ. Psychol. 27(2):270 – 295

Chapell MS, Blanding ZB, Silverstein ME, Takahashi M, Newman B, Gubi A, McCann N (2005). Test anxiety and academic performance in undergraduate and graduate students. J. Educ. Psychol. 97(2). 268-274.

Driscoll R (2007). Westside test anxiety scale validation. Education Resources Information center

Jerusalem M, Schwarzer R (1992). Self – efficacy as a resource factor in stress appraisal process. In R. Schwarzer (Ed.), Self – efficacy: Thought control of actions (pp. 195 -213). Washington DC: Hemisphere.

Jing H (2007). Analysis on the relationship among test anxiety, self-concept and academic competency. US-China Foreign Language. 5(1):48-51.

Lewis A (1970). The ambiguous word Anxiety. International Journal of Psychiatry ,9, 62-79.

Multon KD, Brown SD, Lent RW (1991). Relation of self-efficacy beliefs to academic out comes. A meta-analytic investigation. J. Couns. Psychol. 38:30-38.

Onyeizugbo EU.(2008). Validation of Westside Test Anxiety Scale in Nigeria. Unpublished manuscript.

Ozur EM, Bandura A (1990). Mechanisms governing empowerment effects: A self-efficacy analysis. J. Pers. Soc. Psychol. 58, 472-486.

Pajares F, Shunk DH (2001). Self-beliefs and school success: self–efficacy, self-concept and school achievement. In R. Riding & S. Rayner (Eds.) Perception London: Abex publishing. pp.239-266.

Pajares F, Miller MD, Johnson MJ (1999). Gender differences in writing: self-beliefs of elementary school students. J. Educ. Psychol. 19:50-61.

Pajares F, Valiante G (1997). Influence of writing self-efficacy beliefs on the writing performance of upper elementary students. J. Educ. Res. 90:353-360

Sarason IG (1975). Test anxiety and the self-disclosing coping model. J. Consult. Clin. Psychol. 43:148-152.

Schwarzer R, Bäßler J, Kwiatek P, Schröder K, Zhang JX (1997). The assessment of optimistic self – beliefs: Comparison of the German, Spanish, and Chinese versions of the general self-efficacy scale. Appl. Psychol.: Int. Rev. 46(1):69 -88.

Simpson ML, Parker PW, Harrison AW, (1995). Differential performance on Talyor's manifest anxiety scale in black private college freshmen, a partial report. Perceptual and motor Skills. 80:699- 702.

Spielberger CD (1983). Manual for the State-Trait Anxiety Inventory (STAI). Palo Alto, CA: Consulting Psychologists press.

Zerssen DV (1976). Depressiveness scale .Weinhelim, Germany: Beltz.