

Research Articles

Role of Computer Self-Efficacy and Gender in Computer-Based Test Anxiety Among Undergraduates in Nigeria

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Abstract

This study examined the role of computer self-efficacy and gender in computer-based test (CBT) anxiety among a sample of Nigerian undergraduates. A cross-sectional survey design was adopted. Using a purposive sampling technique, 241 undergraduates (110 males and 131 females) were selected from a public university in Ondo State, Nigeria. Their ages ranged from 17 to 29 years with a Mean of 23.10 (SD = 5.10). Standardized questionnaires were used for data collection. Two hypotheses were tested using simple linear regression and independent t-test. The results showed that undergraduates who had higher level of computer self-efficacy were less likely to experience CBT anxiety ($\beta = -.41$; $p < .01$). Female undergraduates ($M = 65.74$) reported higher level of CBT anxiety than their male counterparts ($M = 52.43$). Therefore, to reduce computer-based test anxiety among undergraduates, we suggest that university managements should organize psychological training that would help enhance undergraduates (especially female undergraduates) computer self-efficacy.

Keywords: computer-based test, computer self-efficacy, gender, Nigeria, undergraduate

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Introduction

In recent years, information and communication technology (ICT) has contributed immensely to most areas of human endeavor such as medicine, banking, agriculture, transportation, and engineering. The field of education is not exempted. Today, ICT has become an important tool that many tertiary institutions and academics use for teaching and learning purposes. Importantly, the developments in ICT and computer technologies have influenced examination testing and assessment (Ogunmakin & Osakuade, 2014). Today, many educational institutions have begun to transit from paper-and-pencil test (PPT) to computer-based test (CBT) (Ogunmakin & Osakuade, 2014) - a test administered to students by computers connected to the internet (Cantillon, Irish, & Sales, 2004; Sorana-Daniela & Lorentz, 2007).

CBT has begun to gain popularity over the traditional PPT because of the numerous benefits it can offer. These benefits include easy administration, prompt scoring of test results, and reduced costs of test production (Ogunmakin

& Osakuade, 2014). Furthermore, CBT reduces examination malpractice, it is more secure, and it is one of the best global practices (Bodmann & Robinson, 2004; Cantillon, Irish, & Sales, 2004; Ogunmakin & Osakuade, 2014). To realize these laudable benefits of CBT and keep trends with international global best practices, many tertiary institutions in Nigeria have begun to adopt CBT. This is clearly evident in those tertiary institutions that have started to use CBT to conduct their Post Unified Tertiary Matriculation Examination (Post UME) and school test or examination.

However, observations of events in some Nigerian universities in recent time have shown that most undergraduates are very apprehensive and anxious about CBT or have CBT anxiety. This is not because the students are unfit for the test or lack computer skills, however, the researchers' observations and in-depth interactions with some of the students showed that some of these students are not familiar with CBT unlike PPT. This may be due to the fact that CBT is recently introduced in most Nigerian universities (Bodmann & Robinson, 2004). Time pressure, irregularity of server, presence of many invigilators, and inadequate computer skill are also some of the factors that may create CBT anxiety for undergraduates in Nigeria.

From the perspective of interference model (Sarason, 1988), undergraduates who experience high CBT anxiety may have low performance in CBT because of negative self-preoccupations (e.g. worry, emotions, and negative thoughts) under test conditions (Musch & Bröder, 1999; Ossai, 2011). Despite its' possible negative effect on undergraduates' performance in CBT, CBT anxiety is yet to be recognized and acknowledged as a serious psychological problem in Nigeria, hence the need to pay attention to it.

CBT anxiety is conceptualized in this study as the apprehension or tension, fear, excessive worry, nervousness, and physiological arousal that occurs prior and during CBT. It is an anxious state induced by fear of failing, inadequate or lack of computer skill, computer anxiety, consistent poor performance (Furner & Duffy, 2002) and time pressure. Students who experience high level of CBT anxiety may be preoccupied with negative and worrisome thoughts and experience some negative physiological reactions such as dizziness, headaches, high blood pressure, sweating, and nausea. They are likely to fidget, feel restless, nervous, helpless, and lack concentration; all of which may inhibit their performance in CBT.

Though, it is normal for an undergraduate to feel anxious about CBT, because minimal or moderate amount of anxiety is needed for the body to respond rapidly and efficiently (Cassady & Johnson, 2002; Onyeizugbo, 2010), however, higher level of anxiety may make it difficult for the student to concentrate and perform adequately (Farooqi, Ghani, & Spielberger, 2012; Onyeizugbo, 2010). Previous studies (e.g., Adewuyi, Taiwo, & Olley, 2012; Akanbi, 2010; Barrows, Dunn, & Lloyd, 2013; Oludipe, 2009; Sridevi, 2013) have attested that students with excessive test anxiety tend to perform poorly academically.

So far, available studies on CBT in Nigeria have only focused on the benefits of CBT implementation in Nigeria (Ayo, Akinyemi, Adebisi, & Ekong, 2007), use of CBT (Akanbi, 2010), and the relationship between computer anxiety, computer knowledge and students' performance in CBT (Ogunmakin & Osakuade, 2014). Although, these studies are highly valuable, however, they do not examine the influence of psychological factors on CBT anxiety among undergraduates. This represents a gap in literature in this area. To fill this gap, we examine the role of computer self-efficacy and gender in CBT anxiety among sample of Nigerian undergraduates. This study is grounded within the framework of social cognitive theory and socialization paradigm.

According to social cognitive theory, belief and the anticipated consequences of events influence reactions to them (Bandura, 1997; Schwarzer, 1992). CBT anxiety involves some cognitions and feelings. For example, an undergraduate with low level of computer self-efficacy may believe that CBT is tougher than it really is. Such a belief fosters anxiety about CBT. Therefore, understanding the role of computer self-efficacy in CBT anxiety will have implication for how psychological interventions can be organized to enhance undergraduates' computer self-efficacy.

Self-efficacy is an individual judgment and belief in his/her capability to effectively execute, perform and succeed in a particular task (Bandura, 1997). It is the belief in one's competence to handle novel and challenging task. According to Compeau and Higgins (1995, p. 192), computer self-efficacy is the "judgment of one's capability to use a computer". In this study, computer self-efficacy is conceptualized as an undergraduate student's judgment and belief in his/her capability to effectively execute, perform and succeed in CBT and other computer-related activities. High computer self-efficacy increases computer-related performance and the ability to persevere when faced with computer-related difficulties (Holcomb, Brown, Kulikowich, & Zgeng, 2003). It reduces computer-induced anxiety and increases positive attitude toward computer (Compeau & Higgins, 1995). This may be because individuals who possess high computer self-efficacy are assertive and believe that their efforts will produce success (Balogun & Olawoye, 2013).

In contrast, individuals who have low level of computer self-efficacy may lack confidence, and often see computer-related activities as a threat to be avoided and shy away from these activities because of their perceived incapability to execute the activities (Pajares & Shunk, 2001). People with low computer self-efficacy may also harbor pessimistic thoughts about their performance.

According to social cognitive theory, individual's efficacy beliefs could influence the amount of anxiety (Bandura, 1997). For instance, during CBT, a student who has a low level of computer self-efficacy may experience higher CBT anxiety while those with high level of computer self-efficacy may experience low level of CBT anxiety. Several researches have shown that lower self-efficacy is correlated with higher test anxiety (Bandalos, Yates, & Thorndike-Christ, 1995; Bembenutty, 2009; Benson, Bandalos, & Hutchinson, 1994; Galla, & Wood, 2012), even among students (Onyeizugbo, 2010), and also in the setting of E-learning. The Canadian university students with low computer self-efficacy experienced higher level of computer anxiety in E-learning (Saade & Kira, 2009).

This may be because, under test condition students with low computer self-efficacy often devote more attention to irrelevant stimuli and experience inappropriate cognitions; thus, they do not persist longer on test (Onyeizugbo, 2010). Hence, we expect that undergraduates who have low level of computer self-efficacy would be more likely to experience higher level of CBT anxiety.

Regarding the relationship between gender and test anxiety, literature review showed that findings linking gender and test anxiety are mixed and inconclusive. For instance, while Akanbi (2013), Falaye (2010), Mwamwenda (1993), Olatoye (2007), and Onyeizugbo (2010) reported non-significant gender differences in test anxiety, Cassady and Johnson (2002), Mwamwenda (1994), Olatoye and Afuwape (2003), Razor and Razor (1998), and Zeidner (1998) reported that female students consistently showed high test anxiety than male students. Going by the mixed and inconclusive results on gender differences in test anxiety and dearth of empirical studies on gender and CBT anxiety in Nigeria, there is a need to further investigate gender differences in CBT anxiety. Hence, we examined if there were gender differences in CBT anxiety among undergraduates in Nigeria.

Hypotheses

1. Computer self-efficacy will significantly predict CBT anxiety.
2. There will be a significant gender difference in CBT anxiety.

Method

Design and Participants

This was a cross-sectional study. Using a purposive sampling technique, a total of 241 (110 males and 131 females) undergraduates were selected from a public university in Ondo State, Nigeria. The participants comprised of undergraduates from various faculties and departments. Their ages ranged between 17 and 29 years ($M = 23.10$, $SD = 5.10$). The participants indicated their year of study. Responses showed that, 61 (25.31%) were in year one, 81 (33.61%) were in year two, 53 (21.99%) were in year three and 46 (19.09%) were in year four.

Measures

A questionnaire consisting of three sections was used for data collection. The first section of the questionnaire tapped socio-demographic information such as age, gender, academic level, and religion. The second and third sections contained measures of computer self-efficacy and computer-based test anxiety respectively.

Computer Self-Efficacy

This was measured using an adapted version of the 10-item scale developed by [Schwarzer and Jerusalem \(1995\)](#). Some sample items include: "I can manage to solve computer-related problem if I try hard enough", "I am certain that I can solve computer-related task", "I can solve most computer-related tasks if I invest the necessary effort", "When I am confronted with a computer-related problem, I can find several solutions". The items of the scale are rated on a 4-point scale (1 = Not at all true; 4 = exactly true). The adapted scale was piloted on a sample of 70 undergraduates. The ten items were valid. The Cronbach's alpha of the scale was .71. High score indicates higher level of computer self-efficacy while low score implies low level of computer self-efficacy. [Schwarzer and Jerusalem \(1995\)](#) reported a Cronbach's alpha coefficient of 0.86 for the original scale.

CBT Anxiety

This was measured using an adapted version of the 22-item Cognitive Test Anxiety Scale developed by [Cassady and Johnson \(2002\)](#). In adapting the scale, the words that reflect test or examination were modified to reflect computer-based test. The adapted scale was piloted on a sample of 70 undergraduates. Only 17-items were valid. The 17-item scale, which measures CBT anxiety, was rated on a 4-point scale (1 = Not at all typical of me; 4 = Very typical of me). Some sample items included: "I lose sleep over worrying about computer-based test", "During computer-based test, I find myself thinking of the consequences of failing", "At the beginning of a computer-based test, I am so nervous that I often can't think straight". [Cassady and Johnson \(2002\)](#) obtained an internal consistency coefficient of .91 for their original scale. The adapted version had Cronbach's alpha of .81 (pilot study) and .79 (main study). Scores above the mean indicate high level of CBT anxiety while scores below the mean indicate low level of CBT anxiety.

Procedure

Administration of the questionnaires took place at the CBT centre in Adekunle Ajasin University, Akungba Akoko in Ondo State, Nigeria. The students were approached after they had taken their CBT. Prior to the administration of the questionnaires to the participants, we sought and obtained permission from the participants and the purpose of the study was explained to them. Using a purposive sampling technique, the researchers administered 250 questionnaires to the participants that consented and retrieved them immediately. Out of the 250 questionnaires administered, only 241 were found usable for the analysis.

The analysis was conducted using Statistical Package for Social Science (SPSS) 17. The statistical methods that were used were simple linear regression analysis and independent samples t-test.

Results

The results from simple linear regression analysis that tested hypothesis 1 are presented in [Table 1](#).

Table 1

Simple Linear Regression on Computer Self-Efficacy and CBT Anxiety

Predictor	<i>B</i>	<i>t</i>	<i>R</i>	<i>R</i> ²	<i>F</i>
Computer Self-efficacy	-.41**	-10.59	-.18	.25	35.19* (<i>df</i> = 1, 240)

p* < .05. *p* < .01.

As indicated in [Table 1](#), computer self-efficacy significantly predicted CBT anxiety, suggesting that undergraduates who had higher levels of computer self-efficacy were less likely to experience CBT anxiety.

The results from independent t-test analysis to test Hypothesis 2 are presented in [Table 2](#).

Table 2

The Results from Independent t-test Regarding Gender Differences in CBT Anxiety

Dependent Variable	Male			Female			<i>df</i>	<i>t</i>	<i>p</i>
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>			
CBT anxiety	110	52.43	9.83	131	65.74	13.78	239	28.10	<.05

As indicated in [Table 2](#), there was a significant gender difference in CBT anxiety. The female undergraduates reported higher levels of CBT anxiety than their male counterparts.

Discussion

This study examined the role of computer self-efficacy and gender in CBT anxiety among undergraduates in a Nigerian University. The findings of the study indicated that computer self-efficacy significantly predicted CBT anxiety, such that undergraduates who had low level of computer self-efficacy were more likely to experience

higher CBT anxiety. This finding is in line with the findings by [Saade and Kira \(2009\)](#) who found that students who had higher level of computer self-efficacy experienced lower level of computer anxiety in E-learning. The result also supports [Compeau and Higgins' \(1995\)](#) idea that low computer self-efficacy increases computer-induced anxiety and decreases positive attitude toward computer. This is because undergraduates with low level of computer self-efficacy are less assertive and do not believe that their efforts will produce success in CBT. Thus, they are likely to persist less, be easily distracted and quickly give up on challenging task such as CBT, and dwell on their deficiencies because they have lower aspirations and commitment to their goals ([Ndukaihe & Mefoh, 2013](#)).

Undergraduates with higher levels of computer self-efficacy are more likely to be assertive and may often see computer-related activities (e.g. CBT) as a challenge to be tackled and not as a threat to be avoided or shy away from. This may be because of their high perceived capability to execute the computer-related activities ([Pajares & Shunk, 2001](#)). In contrast, undergraduate students with low computer self-efficacy may be unable to persevere when faced with computer-related difficulties ([Holcomb, Brown, Kulikowich, & Zgeng, 2003](#)).

Additionally, the findings revealed that female undergraduates significantly reported higher levels of CBT anxiety compared with their male counterparts. This result is in consonance with the findings of [Cassady and Johnson \(2002\)](#), [Mwamwenda \(1994\)](#), [Olatoye and Afuwape \(2003\)](#), [Razor and Razor \(1998\)](#), and [Zeidner \(1998\)](#) which reveal that female students experienced higher test anxiety than their male counterparts. That females reported higher level of CBT anxiety than their male counterparts is not surprising, because females seem to be more emotional, have less self-control, and often perceive evaluative situations as more threatening than their male counterparts ([Akanbi, 2013](#)). In the setting where this study was conducted, females are socialized to be soft, calm, submissive, and less competitive and aggressive ([Akinwale, 2009](#); [Falaye, 2010](#); [Onyeizugbo, 2010](#)). Thus, they are more likely to be more susceptible to CBT anxiety than their male counterparts who are socialized to be bold, confident, competitive and more aggressive. Female undergraduates are also more likely to experience higher CBT anxiety because they are more emotional, have less self-control, and often perceive evaluative situations as more threatening (which can heighten the likelihood of cognitive interference) than their male counterparts ([Akanbi, 2013](#)). As a result, they seem to be more easily and quickly susceptible to anxiety.

Conclusion

This study has shown that Nigerian undergraduates who have higher level of computer self-efficacy are more likely to experience lower level of CBT anxiety. The study also established that female undergraduates reported higher level of CBT anxiety than their male counterparts. Based on these findings, we recommend that university management should organize psychological training that would enhance undergraduates' computer self-efficacy, with more focus on female undergraduates.

Theoretically, findings of this study lend support to and extend the social cognitive theory. In term of support, this study supported that efficacy belief (computer self-efficacy) plays a significant role in the amount of anxiety (CBT anxiety) experienced by the undergraduates. In term of extension of scientific knowledge, this is the first study to apply social cognitive theory to CBT anxiety in a developing country such as Nigeria.

There are also some limitations for this study. Firstly, the sample size and spread did not adequately represent universities in Nigeria. Secondly, sample was selected from just a public university in South-Western part of Nigeria. Thirdly, the two independent variables examined are not the only psychological factors which account for CBT anxiety. For example, emotional intelligence (EI) may also predict CBT anxiety. This is because research

has shown that individuals with EI experiences have the ability to manage their own and others emotions (Goleman, 1995). Fourthly, self-report measures, which are vulnerable to social desirability effects, were used for data collection. Therefore, future studies should put the foregoing limitations into consideration when investigating the antecedents of CBT anxiety among undergraduates.

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Competing Interests

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References

- Adewuyi, T. O., Taiwo, O. K., & Olley, B. O. (2012). Influence of examination anxiety and self-efficacy on academic performance among secondary school students. *Ife Psychologia*, 20(2), 60-68.
- Akanbi, S. T. (2010). Test anxiety as a correlate of academic achievement among senior secondary school students in Ogbomoso area of Oyo State. *African Journal of Educational Research*, 14(1-2), 89-97.
- Akanbi, S. T. (2013). Comparisons of test anxiety level of senior secondary school students across gender, year of study, school type and parental educational background. *Ife Psychologia*, 21(1), 40-54.
- Akinwale, A. A. (2009). Manifestation of human sexuality and its relevance to secondary schools in Nigeria. *International Journal of Sociology and Anthropology*, 1(1), 1-5.
- Ayo, C. K., Akinyemi, I. O., Adebisi, A. A., & Ekong, U. O. (2007). The prospects of e-examination implementation in Nigeria. *Turkish Online Journal of Distance Education*, 8(4), 125-134.
- Balogun, A. G., & Olawoye, P. A. (2013). Correlates of depression among prison inmates in South-Western Nigeria. *Nigerian Journal of Applied Behavioural Sciences*, 1(1), 43-55.
- Bandalos, D. L., Yates, K., & Thorndike-Christ, T. (1995). Effect of math self-concept, perceived self-efficacy, and attribution for failure and success on test anxiety. *Journal of Educational Psychology*, 87(4), 611-623. doi:10.1037/0022-0663.87.4.611
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY, USA: Freeman.
- Barrows, J., Dunn, S., & Lloyd, C. A. (2013). Anxiety, self-efficacy, and college exam grade. *Universal Journal of Educational Research*, 1(3), 204-208.
- Bembentuy, H. (2009). Test anxiety and academic delay of gratification. *College Student Journal*, 43(1), 10-21.
- Benson, J., Bandalos, D. L., & Hutchinson, S. (1994). Modeling test anxiety among men and women. *Anxiety, Stress, and Coping*, 7(2), 131-148. doi:10.1080/10615809408249340

- Bodmann, S. M., & Robinson, D. H. (2004). Speed and performance differences among computer-based and paper-pencil tests. *Journal of Educational Computing Research*, 31(1), 51-60. doi:10.2190/GRQQ-YT0F-7LKB-F033
- Cantillon, P., Irish, B., & Sales, D. (2004). Using computers for assessment in medicine. *British Medical Journal*, 329, 606-609. doi:10.1136/bmj.329.7466.606
- Cassady, J. C., & Johnson, R. E. (2002). Cognitive test anxiety and academic performance. *Contemporary Educational Psychology*, 27(2), 270-295. doi:10.1006/ceps.2001.1094
- Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. *Management Information Systems Quarterly*, 19(2), 189-212. doi:10.2307/249688
- Falaye, B. A. (2010). Cognitive test anxiety and learning outcomes of selected undergraduate students. *The African Symposium*, 10(2), 69-74.
- Farooqi, Y. N., Ghani, R., & Spielberger, C. D. (2012). Gender differences in test anxiety and academic performance of medical students. *International Journal of Psychology and Behavioral Sciences*, 2(2), 38-43. doi:10.5923/j.ijpbs.20120202.06
- Furner, J. M., & Duffy, M. L. (2002). Equity for all students in the new millennium: Disabling math anxiety. *Intervention in School and Clinic*, 38(2), 67-74. doi:10.1177/10534512020380020101
- Galla, B. M., & Wood, J. J. (2012). Emotional self-efficacy moderates anxiety-related impairments in math performance in elementary school-age youth. *Personality and Individual Differences*, 52(2), 118-122. doi:10.1016/j.paid.2011.09.012
- Goleman, D. (1995). *Emotional intelligence: Why it can matter more than IQ*. New York, NY, USA: Bantam Books.
- Holcomb, L. B., Brown, S. W., Kulikowich, J. M., & Zgeng, D. (2003). *Raising educational technology self-efficacy through assessment*. Poster presented at the APS conference, Atlanta, GA, May 30, 2003. Retrieved from http://aps.psychologicalscience.org/cfs/program/view_submission.cfm?Abstract_ID=4203
- Musch, J., & Bröder, A. (1999). Test anxiety versus academic skills: A comparison of two alternative models for predicting performance in a statistics exam. *British Journal of Educational Psychology*, 69(1), 105-116. doi:10.1348/000709999157608
- Mwamwenda, T. S. (1993). Gender differences in test anxiety among South African university students. *Perceptual and Motor Skills*, 76(2), 554-560. doi:10.2466/pms.1993.76.2.554
- Mwamwenda, T. (1994). Gender differences in scores on test anxiety and academic achievement among South African university graduate students. *South African Journal of Psychology*, 24(4), 228-230. doi:10.1177/008124639402400409
- Ndukaihe, I. L. G., & Mefoh, P. C. (2013). Self-efficacy and background music on mathematics test anxiety among secondary school students. *Nigerian Journal of Psychological Research*, 9, 20-27.
- Ogunmakin, A. O., & Osakuade, J. O. (2014). Computer anxiety and computer knowledge as determinants of candidates' performance in computer-based test in Nigeria. *British Journal of Education, Society & Behavioral Science*, 4(4), 495-507.
- Olatoye, R. A. (2007). The relationship between students test anxiety and achievement in integrated science in Ogun State. *Nigerian Journal of Educational Research and Evaluation*, 7(1), 8-15.
- Olatoye, R. A., & Afuwape, M. O. (2003). Test anxiety as a determinant of examination misdemeanor among some Nigerian secondary school students. *Ibadan Journal of Educational Studies*, 3(1-2), 32-39.

- Oludipe, B. (2009). Influence of test anxiety on performance levels on numerical tasks of secondary school physics students. *Academic Leadership: Online Journal*, 7(4). Retrieved from <http://contentcat.fhsu.edu/cdm/compoundobject/collection/p15732coll4/id/420/rec/1>
- Onyeizugbo, E. U. (2010). Self-efficacy, gender and trait anxiety as moderators of test anxiety. *Electronic Journal of Research in Educational Psychology*, 8(1), 299-312.
- Ossai, M. C. (2011). Guidance and counseling implications of examination anxiety as a predictor of students' attitude towards examination malpractices. *Mediterranean Journal of Social Sciences*, 2(7), 85-90.
- Pajares, F., & Shunk, D. H. (2001). Self-beliefs and school success: Self-efficacy, self-concept and school achievement. In R. Riding & S. Rayner (Eds.), *Perception* (pp. 239-266). London, United Kingdom: Abex.
- Razor, L. T., & Razor, R. A. (1998). *Test anxiety and study behaviour of community college students in relation to ethnicity, gender, and age*. California. Retrieved from <http://files.eric.ed.gov/fulltext/ED415942.pdf>
- Saade, R. G., & Kira, D. (2009). Computer anxiety in E-learning: The effect of computer self-efficacy. *Journal of Information Technology Education*, 8, 177-191.
- Sarason, I. G. (1988). Anxiety, self-preoccupation and attention. *Anxiety Research International*, 1(1), 3-7.
doi:10.1080/10615808808248215
- Schwarzer, R. (1992). Self-efficacy in the adoption and maintenance of health behaviours: Theoretical approaches and a new model. In R. Schwarzer (Ed.), *Self-efficacy: Thought control of action* (pp. 217-242). Washington, DC, USA: Hemisphere.
- Schwarzer, R., & Jerusalem, M. (1995). Generalized self-efficacy scale. In J. Weinman, S. Wright, & M. Johnson (Eds.), *Measures in health psychology: A user's portfolio: Causal and control beliefs* (pp. 35-37). Windsor, United Kingdom: NFER-NELSON.
- Sorana-Daniela, B., & Lorentz, J. (2007). Computer-based testing on Physical Chemistry topic: A case study. *International Journal of Education and Development Using Information and Communication Technology*, 3(1), 94-95.
- Sridevi, K. V. (2013). A study of relationship among general anxiety, test anxiety, and academic achievement of higher secondary school students. *Journal of Education and Practice*, 4(1), 122-131.
- Zeidner, M. (1998). *Test anxiety: The state of the art*. New York, NY, USA: Plenum Press.

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