Pakistan Journal of Social and Clinical Psychology
2013, Vol. 11, No.1, 29-35

Development and Validation of Study Anxiety Scale for School Students

Arooj Maqsood and Tazvin Ijaz
GC University, Lahore.

Study anxiety is among one of the many important factors that has been found to be negatively affecting the academic achievements of school children. The present study was aimed at exploring the phenomenon of study anxiety among school children. For this purpose the phenomenology of study anxiety was explored using semi-structured interviews. On the basis of interviews, 28 items scale was constructed and then administered on the sample of 419 school children: 201 boys; and 218 girls from 6 Government Schools of Lahore. Exploratory factor analysis revealed 3 components of study anxiety i.e. fear of evaluation, behavioral manifestations and memory interference. The overall Cronbach Alpha was found to be .91 ($p < .01$), whereas the concurrent validity was found to be .68 and one week test-retest reliability was found to be .90 which was significantly high. The factor structure of the scale is discussed in a cultural context proposing a model showing possible links between different ecological factors and study anxiety.

Keywords: study anxiety, school children, academic achievement

The students' achievement and learning are influenced by various factors in different societies as evidenced by numerous researches. These factors range from parenting styles, skills, learning styles to nutrition and physical health (Barton, 2004; Diaz, 2003; Hammer, 2003). Another factor that has been considered significantly important in the literature is of "anxiousness". A fair number of studies have found high association between study anxiety and academic achievement among students as anxiety has been known to have both facilitating and debilitating effects on academic achievement (El-Anzi, 2005; McCraty, 2007; McCraty, Dana, Mike, Pam, & Stephen, 2000).

According to the various studies about anxiety among students, the study anxiety is a situation specific condition of anxiety that is experienced during the study process which hinders academic performance of a student (Zeidner, 1998). Different research studies reported that the higher level of anxiety has been associated with lower academic performance (e.g., Hamzah, 2007; Sena, Whitaker, Lowe, Patricia, Lu, & Steven, 2007; Yildirim & Ergene, 2003). Students with higher levels of anxiety were found to have serious problems in working memory like reduced memory span, loosing concentration, low confidence level, and poor reasoning ability (Vitasari, Abdul Wahab, Othman, Herawan, & Sinnadurai, 2010). Hence, students have problem in their academics when they confront anxious experience during their study process.

It has been found that study anxiety appears when students are doing their class work, exams, assignments, or presentations or in other words whenever they are required to perform in front of others (Merritt, Richards, & Davis, 2001) and this anxiety may interfere with their academic progress (Becker & Luthar, 2002). Study anxiety may manifest itself in many different ways including physiological, behavioural, emotional and cognitive ways. The physiological manifestations of the study anxiety include sweaty palms, rapid and shallow breathing, hot flushes, nervousness, agitation, increased heartbeat, low voice tone, fidgeting, stuttering, trembling, upset stomach and so on. Behaviourally, study anxiety may be depicted as the avoidance of performance situations, school refusals and poor academic achievement (VanAmeringen, Mancini, & Farvolden, 2003). Whereas the cognitive and emotional manifestations of study anxiety include memory disturbances, feeling nervous before or during the class, panicking, going blank during an exam, excessive worrying, a sense of fear, restlessness, negative thinking, feeling helpless while doing assignments, or lack of interest in a difficult subject (Fehm & Schmidt, 2004; Ruffins, 2007).

The cognitive manifestation of study anxiety is the component that has been affecting academic performance more negatively than emotional or behavioural manifestations of study anxiety (Ingugiro, 1999; Robb, 2005) and thus has gained attention of various researchers in recent years. Robb (2005) proposed that cognitive anxiety would have negative correlation with performance while physiological anxiety has curvilinear relationship with performance. Further exploring cognitive anxiety, Reyes (1984) identified thoughts which result in higher study anxiety such as failing in exam or test, predictions of failure, self-degrading thoughts, getting lower grades, thinking that they have forgotten everything and know nothing and thinking that they will disappoint their family. Gender differences have also been documented, with females reporting higher levels of performance anxiety than males (Fehm & Schmidt, 2006; Khalid & Hasan, 2009; Nausheen & Richardson, 2010).

With reference to Pakistani context, several studies have been carried out that highlighted the significance of anxiety in academic achievement (Nausheen & Richardson, 2010; Rana & Mahmood, 2010; Sarwar, 2004; Zaman, Atif, Shah, Ayub, & Farooq, 2010). But most of the earlier studies were carried out with college and University students. These studies highlighted the cognitive factors as more responsible than affective factors in student's underachievement and poor performance (Nausheen & Richardson, 2010; Zaman, Atif, Shah, Ayub,& Farooq, 2010). Similarly, it has been found that negative and irrational thinking about exams, self-criticism, extensive course load, poor self-management, study attitudes and rigid educational system of Pakistan are strong contributors in low academic grades of students (Hashmat,

Correspondence regarding this article should be addressed to Dr. Tazvin Ijaz, Assistant Professor, Incharge Clinical Unit, GC University, Lahore. Email: tazvin_ijaz@yahoo.com

Hashmat, Amanullah, & Aziz, 2008; Rana & Mahmood, 2010; Sarwar, 2004).

In these researches study anxiety is measured through Speilberger's test anxiety inventory (TAI) (1980). The scale has been developed according to the western culture and may not accurately tap the manifestation of test anxiety in a collectivistic culture like Pakistan where educational system is totally different from the western educational system.

In one study carried out with university students in Pakistan (Zaman, Atif, Shah, Ayub,& Farooq, 2010), researchers explored the factors of exam anxiety as the result of stressed environment and clashes amongst student's federations at the university campus. Results showed that 60% of the participants need psychiatric services to overcome fear and anxiety. Further, the anxiety level among the urban area students was found to be higher than the rural area. Also, students expressed their concern regarding insecure environment that affect their studies and increase exam anxiety. Another cross sectional study (Hashmat, Hashmat, Amanullah, & Aziz, 2008) was carried out over four weeks to assess the factors causing exam anxiety among 120 final professional medical students using Visual Analogue Scale (VAS). Students' reported extensive course loads, lack of physical exercise and long duration of exams as most important factors of exam anxiety. Most of the students lack study skills and had no knowledge of anxiety-reduction techniques.

Similarly, another study (Rana & Mahmood, 2010) aimed at exploring the relation between test anxiety and academic achievement was carried out with the 414 post graduate students. Using Spielberger's Test Anxiety Inventory (TAI) and statistical methods, it was found that significant negative relation exists between test anxiety and students' academic achievement. Results also showed that a cognitive factor (worry) contributes more in test anxiety than affective factors (emotional).

In addition to different educational system, literature (Bourne, 1995) evidenced that anxiety varied in its manifestations among different group of individuals. Thus, it is highly needed to investigate and explore the current phenomenon with its manifestation in Pakistani culture.

Method

Phase I: Exploring Phenomenology

In order to explore the manifestation of study anxiety in school children, 28 school children (10 girls; 18 boys) of grades 7th and 8th of six Government schools were interviewed. Purposive sampling technique was used to select the sample. The pool of 40 items was generated after interviews. Using the conceptual analysis all the repeating, overlapping and slang items were discarded. At the end, a list of 28 items was retained reflecting the manifestation of study anxiety among school children.

Phase II: Tryout Phase

The aim of this phase was to assess the layout, user friendliness of the scale and understanding of the items of Study Anxiety Scale (SAS) by the target population. 40 students (boys = 18; girls = 22) of grades 7th and 8th were selected for this phase using purposive sampling technique.

Procedure.

Initially, permissions were sought from the authorities of the government schools. They were briefed about the purpose of the study and the time duration required. After obtaining permissions, students of grades 7th and 8th were approached. They were told about the purpose of the study and the time duration required from them. Verbal consent was taken from them followed by the instructions and then the scale was administered in a group form. They were asked to complete the questionnaire and review the layout of the scale and to identify and give suggestions, if they find any difficulty in understanding the instructions and the items.

Following the feedback given by the participants, few items were rephrased as they were found to be difficult to understand. After incorporating the suggestions given by the participants the final scale of 28 items was developed.

Phase III: Establishing Psychometric Properties

The list of 28 items elicited through interviews was converted in the form of 4 point rating scale. The resultant scale was then given to 419 school children in order to establish psychometric properties of SAS for school children.

Sample

The sample of 419 participants (201 boys; 218 girls) of grade 7th and grade 8th was collected from six Government schools of Lahore using stratified random sampling technique. In the first stage the sample was divided into two main strata according to the grades i.e. grade 7th and grade 8th. Then these strata were further divided into two sub-strata of boys and girls. Mean age for girls was found to be 12.13 (S.D = 0.99) and for boys 13.12 (S.D.= 1.36). All the students who participated in the previous phases were not included in the sample of main study.

Instruments

Demographic Questionnaire.

On the basis of literature review, the demographic variables of gender and class were included.

Anxiousness Subscale of School Children Problem Scale (SCPS).

In order to establish the concurrent validity of the Study Anxiety scale, Anxiousness subscale of School Children Problem Scale (SCPS) (Saleem & Mahmood, 2010) was used. Anxiousness subscale is one of the six subscales of SCPS (Saleem & Mahmood, 2010). It comprised of 23 items. It is a self-report measure that is designed for screening and assessing emotional and behavioral problems of school children of Pakistan. It consists of six sub scales including anxiousness, academics, aggression, social withdrawal, feelings of being rejected and somatic problems.

It has been validated against Youth Self Report form (YSR) (Achenbach & Rescorla, 2001). SCPS was found to have acceptable level of psychometric properties with the test retest reliability of 0.795 and the Cronbach Alpha was found to be 0.921. Split half reliability of the scale was reported to be 0.897.

Table 1
Factor Loadings on Three Factors of SAS for School Children (>.30)

Items	Fear of Evaluation	Behavioral Manifestation	Memory Interference
1- Fear of being beaten by the teacher while reading the lesson.	**.54**	.15	.17
2- Body shivering due to the fear, while reading the lesson.	**.41**	.36	.12
4- Fear of making mistakes while reading the lesson.	**.63**	-.39	.19
6- Heart trembles while reading the lesson.	**.61**	.16	.17
7- Fear of getting scolded by the teacher, while reading the lesson.	**.67**	.19	.22
10- Fear of being ashamed in front of the class, while reading the lesson.	**.67**	.11	.15
11- Heart beat increases while reading the lesson.	**.63**	.15	.15
12- Fear of something unknown happen, while reading the lesson.	**.41**	.22	.34
13- Fear of complaint at home, while reading the lesson.	**.61**	.36	.05
14- Being confused while reading the lesson.	**.40**	.11	.36
15- Fear of forgetting the lesson, if the last child forgets his/her lesson while reading.	**.45**	.23	.30
18- Fear of failure in the examination.	**.48**	.44	.10
21- Fear of being ashamed in front of the teacher, while reading the lesson.	**.56**	.44	.58
16- Fidgeting hands while reading the lesson.	.20	**.46**	.57
17- Unable to speak while reading the lesson.	.16	**.39**	.29
19- Sudden pause while reading the lesson in the class.	.19	**.55**	.15
20- Sweating due to the fear while reading the lesson.	.29	**.58**	.46
22- Fear of being expelled from the school, while reading the lesson.	.41	**.60**	-.16
23- Lack of self-confidence, while reading the lesson.	.18	**.45**	.13
25- Do not verbalize the learned lesson intentionally.	.10	**.55**	.17
26- Unable to learn the lesson.	-.23	**.40**	.39
28- Forgetting the lesson due to rote learning.	.47	**.48**	.27
3- Forgetting the lesson while reading it.	.12	.27	**.66**
5- Forgetting the learned material while looking at the exam paper.	.29	.13	**.51**
8- Forgetting the lesson because of the teacher's fear.	.35	.23	**.44**
9- Pausing while reading the lesson.	.37	.21	**.44**
24- Forgetting the learned material.	.18	.17	**.64**
27- Forgetting the learned material due to over learning.	.21	.30	**.64**

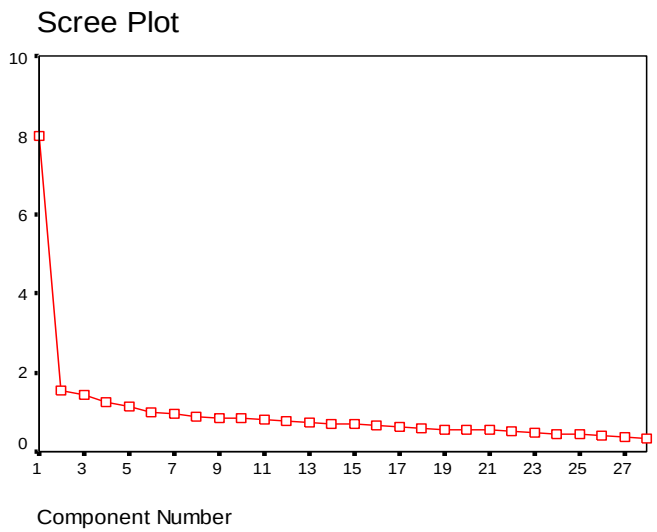

Figure 1 *Scree plot Showing Extraction of Factors of SAS for school children.*

Study Anxiety Scale (SAS).

This scale was indigenously developed during the process of this research. It consisted of 28 items and with a rating scale of 0 - 3 (not at all, sometimes, often, always) indicating the degree to which the participants experience different dimensions of study anxiety.

Procedure

Before collecting the data, permissions were sought from the administration of six Government schools, assuring about the confidentiality and privacy that the data would be used for research purposes only. After obtaining permissions, students of grades 7th and 8th were approached in their classes. They were told about the time required during the whole process. They were briefed about the purpose and rationale of the study and verbal consent was taken from them. After that instructions were given to the participants and the administration was carried out in a group form. After administration, the participants were debriefed about the whole process. They were encouraged to ask questions, if they had any. They were also encouraged to discuss any of the issues regarding their academic or other problems, and they were helped accordingly.

Results

Psychometric properties of the SAS

In order to establish the psychometric properties of the SAS, factor analysis, concurrent validity, internal consistency and test retest reliability were carried out. The scree plot revealed five factors solution.

Factor Analysis.

In order to explore the factor structure of the Study Anxiety Scale, Exploratory Factor Analysis with Varimax rotation was carried out. The scree plot and factor analysis revealed 5 factor solution which had many dubious items. After wards, series of factor analyses were carried out with three, four and five factor solutions. Three factors solution was retained as it contained the least number of dubious items and cross-loadings. All the items that had factor loadings of .30 or greater were included in the respective factors (Kline, 1994).

Table 1 shows the results of exploratory factor analysis on factors of SAS for school children. Three factors were obtained and the detail of factors is as follows:

F1: Fear of Evaluation.

The first factor consisted of 13 items indicating the fear of evaluation in study anxiety. Examples include "fear of making mistakes while reading the lessons", fear of getting scolded by the teacher", "fear of being ashamed in front of the class", "fear of being beaten by the teacher" and so on.

F2: Behavioral Manifestation.

The second factor consisted of 9 items depicting behavior manifestations of study anxiety. Examples include "fidgeting hands while reading the lesson", "unable to speak while reading the lesson", "sweating due to the fear while reading the lesson", "sudden pause while reading the lesson in the class" and so on.

F3: Memory Interference.

The third factor consisted of 6 items indicating certain conditions that cause hindrances in learning and retaining as a result of study anxiety. Examples include "forgetting the learned material while looking at the paper", "forgetting the learned material due to over learning", "forgetting the lesson because of the teacher's fear" and so on.

Table 2

Eigenvalues and Percentages of Variance of Three Factors of Study Anxiety Scale

Factors	Total	% of Variance	Cumulative %
Fear of evaluation	4.78	17.06	17.06
Behavioral manifestation	3.33	11.88	28.93
Memory interference	2.84	10.14	39.07

Table 3

Cronbach Alpha Values for 3 Factors of SAS and Total Score on SAS of School Children (N=419)

Factors	No. of items	Alpha value
Fear of evaluation	13	0.87
Behavioral manifestation	9	0.72
Memory interference	6	0.72
SAS total	28	0.91

Table 2 shows factor loadings and percentage of variance of factors of SAS for school children. F1 accounted for 17% of variance, F2 accounted for 12% of variance and F3 accounted for 10% of variance. It revealed that F1 had the highest percentage of variance indicating relatively greater importance attached to the first factor of fear of evaluation by the school children, followed by F2 and F3 respectively.

Internal consistency

To establish internal consistency of the scale Chronbach alpha was calculated.

Table 3 shows the internal consistency of the SAS total and its 3 factors. The alpha values of three factors of SAS i.e., Fear of evaluation, Behavioral manifestation and Memory interference were found to be .87, .72, and .72 respectively. The internal consistencies of the factors were found to be highly significant (p<0.001). Cronbach alpha value for SAS total was found to be .91 (p<0.01). Thus, SAS is found to be highly internally consistent.

Concurrent validity.

In order to establish the concurrent validity of SAS, anxiousness subscale of SCPS (Saleem & Mahmood, 2010) was used.

Table 4 provides a matrix of intercorrelation between factors and total score of SAS with anxiousness subscale of SCPS. The correlation of anxiousness subscale with three factors of SAS i.e., fear of evaluation, behavior manifestation and memory interference were found to be .63, .57, and .54 respectively, which indicates that each factor of SAS is significantly correlated (p<.001) with the anxiousness subscale of SCPS. The overall concurrent validity was found to be.68 (p<0.001), which indicates that SAS has significant concurrent validity against the existing subscale of anxiousness of SCPS.

Test retest reliability.

In order to establish the test retest reliability of the Study Anxiety Scale (SAS), it was re-administered on 14 % of the sample after one week's interval. Purposive sampling technique was used to select the sample. After getting consent form the participants, the SAS

Table 4
Inter-correlations between 3 Factors and Total of SAS and Total Score on Anxiousness Subscale of SCPS (N=419)

Factors	Fear of evaluation	Behavioral manifestation	Memory interference	SAS total	Anxiousness subscale
Fear of evaluation	-	.65***	.62***	.94***	.63***
Behavioral manifestation	-	-	.54***	.83***	.57***
Memory interference	-	-	-	.77***	.54***
SAS total	-	-	-	-	.68***
Anxiousness subscale	-	-	-	-	-

****p*<.001.

Table 5
M, SD, t and p-values of Boys (n=201) and Girls (n=218) on Total Scores on SAS

Variables	*M*	*SD*	*t*	*p*<
Gender				
Girls	32.18	15.63	2.72	.007***
Boys	28.18	14.41		

*** *p*< .001. *df* = 417.

was administered using the same instructions given in the main study in group form. The test re-test reliability of the SAS was .90. It was evident from the results that the test retest reliability of the scale is high.

Study Anxiety and Gender

Hypothesis: Girls will have higher Study anxiety than boys.

In order to test this hypothesis, *t*-test was carried out between gender and SAS scores.

Table 5 shows the comparison of boys and girls on study anxiety. *t*-test indicated that girls experienced higher levels of study anxiety (M= 32.18, SD = 15.63) than boys (M= 28.18, S.D. = 14.41).

Discussion

The present study explored a distinct, although not new construct, of study anxiety among school children. A profusion of literature evidenced the significance of study anxiety and its relation with academic achievement of school children(Vitasari, Abdul Wahab, Othman, Herawan, & Sinnadurai, 2010).Researchers invested their decades in categorizing several cognitive, behavioral and other psychological factors that play crucial role in the development of study anxiety among students (Zeidner, 1998).

Though, studies shed light upon the study anxiety construct in depth revealing its key factors. The current research was focused on exploring the factors of study anxiety found in school children of Pakistan. So far, the work done in Pakistan on study anxiety was based upon assessment tools developed and standardized in the Western cultures. These assessment tools may help in identifying study anxiety but may not be able to tap the variations of this construct in a collectivistic culture whose educational system is totally different from the west and where corporal punishment is very common (IRIN, 2004; SPARC, 2004). Therefore, one of the objectives of the current study was to develop an indigenous study anxiety scale to unravel the manifestation of study anxiety in Pakistani school children.

After exploring the phenomenology of the scale, the psychometric properties were established on a sample of 419 school children. Factor analysis of the indigenously developed scale for study anxiety depicted that study anxiety has three components i.e. fear of evaluation, behavioral manifestations and memory interference. Fear of evaluation and memory interferences are related to cognitive components of study anxiety whereas, behavioral manifestation is more related to the emotional component. Similar factors structure has been observed in earlier researches (e.g. Ruffins, 2007; Van-Ameringen, Mancini, & Farvolden, 2003).

Vitasari and his colleagues (2010) evidenced that physiological arousal and cognitive anxiety significantly impact students' academic performance. Memory interferences such as lack of concentration, reduced memory span, and poor reasoning power have also been found in the literature as a part of study anxiety among students (Aronen et al., 2005).Some theories also support factors such as physiological, cognitions and environmental as a part of study anxiety in students (Eysenck & Calvo, 1992; Spielberger & Vagg, 1995).

The developed scale (SAS) in the present study has a cognitive component i.e., fear of evaluation that depicted fears of school children related to the evaluation by their teachers, parents, peers and so on. It also depicted that students used to think irrationally about other's expectations and criticisms and consequently, it affect their academic performance adversely. High percentage (17 %) was attached to this factor showing its importance among school children. Becker and Luthar (2002) evidenced that the social group of a student is more interested in knowing the results of a student rather than the input given by him along with the process he has gone through.

Items in the SAS relating to corporal punishment as a part of the factor of fear of evaluation (e.g. "fear of being beaten") also have their implications. Earlier scales developed tapping study anxiety contained items related to others' expectations and criticism regarding academic performance (see Spielberger, 2010) but the fear of punishment by both parents' and teachers (i.e., corporal punishment) has not been highlighted. It might be the consequence of extensive use of corporal punishment in our educational system (IRIN, 2008).

Factor analysis revealed the second factor of "behavioral manifestation" that implies the physiological reactions and responses that occur while experiencing study anxiety. In the current study, school children reported physiological responses such as increased heart rate, fidgeting, stammering and sweating. It appears that students might also get distracted by the physiological

arousal that affects their performance in academics (Hammer, 2003). And there is a strong association between physiological arousal such as increased heart rate, sweaty palms, cold, nervousness, or an upset stomach and declining performance of a student (VanAmeringen, Mancini,& Farvolden, 2003).

The results of the study also pointed towards significant gender differences on study anxiety. The findings suggest that girls were significantly higher in study anxiety than boys ($p< .001$). In Pakistani society, overall academic burden radically existed on both boys and girls. However, recently, more expectations have been attached with girls as they are getting higher grades and excelled in academics than boys since last decades (Chapell, et al., 2005). Society, including parents and teachers have raised their aspirations regarding academic performance from the girls. This increase in expectations might be a contributory factor in raising the level of anxiety in girls (Nausheen & Richardson, 2010). Furthermore, studies evidenced that girls are more emotional than boys and hence are more anxious in general (Nauert, 2006) and this might also have contributed in higher level of study anxiety in girls.

Future implications

The findings of the current research suggests several fruitful directions for future researches. The strong psychometric properties of the scale support the use of the instrument in both research and practice by various educational professionals, including teachers, administrators, and school psychologists. Now as the manifestation of study anxiety has been explored, future researches can be focused on exploring the role of different factors like parenting practices, teaching styles in the development of study anxiety in Pakistani culture. This scale can also be used in cross cultural research comparing Study anxiety in Pakistan and other collectivistic cultures. Various workshops focusing on grooming students in skills such as stress management, study skills, dealing with test or exam anxiety, effective time management and teacher-student relationship can be organized by school authorities.

Conclusion

This study revealed that in school children of Pakistan study anxiety manifests itself in behavioral terms and may lead to memory interference, and may thus cause problems in performing better academically. Fear of evaluation is another dimension of study anxiety highlighted by the school children with a distinctive feature of corporal punishment. The study also showed that like other cultures girls are higher in study anxiety than boys.

References

Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA School-Age forma & profile*. Vermont University, Department of Psychiatry.

Aronena, E. T., Vuontelab, V., Steenaria, M. R., Salmia, J., & Carlson, S. (2004). Working memory, psychiatric symptoms, and academic performance at school. *Neurobiology of Learning and Memory, Elsivier. 83*(1), 33-42. Doi:10.1016/j.nlm.2004.06 .010

Barton, P. (2004). Why does the gap persist?. *Educational Leadership, 62* (3), 9.

Becker, B. E., & Luthar, S. S. (2002). Social-emotional factors affecting achievement outcomes among disadvantaged students: Closing the achievement gap. *Educational Psychologist, 37*(4), 197-214.

Bourne, E. J. (1995). *The anxiety and phobia workbook* (2nd ed.). Oakland, CA: New Harbinger.

Chapell, M. S., Blanding, Z. M., Takahashi, M., Silverstein, M. E., Newman, B., Gubi, A., & McCann, N. (2005). Test anxiety and academic performance in undergraduate and graduate students. *Journal of Educational Psychology, 97*(2). 268-274. doi: 10.1037/0022-0663.97.2.268

Diaz, A. L. (2003). Personal, family, and academic factors affecting low achievement in secondary school. *Electronic Journal of Research in Educational Psychology and Psycho Pedagogy. 1*(1), 43-66.

Eysenck, M. W., & Calvo, M. G. (1992). Anxiety and performance : The processing efficiency theory. *Cognition & emotion, 6*(6), 409 - 434.

Fehm, L., & Schmidt, K. (2006). Performance anxiety in gifted adolescent musicians. *Anxiety Disorders, 20*, 98-109.

Hammer, B. (2003). ETS identifies affecting student achievement-Washington update. *Black Issues in Higher Education.* Retrieved from http://findarticles.com/p/articles/ mi_m0DXK/is _22_20/ai_112166846/?tag=content;col1

Hamzah, H. M. (2007). *Language anxiety among first year Malay students of the international Islamic college: An investigation of L2 skills, sources of anxiety, and L2 performance* (Master's thesis). International Islamic University Malaysia, Malaysia.

Hashmat, S., Hashmat, M., Amanullah, F., & Aziz, S. (2008). Factors causing exam anxiety in medical students. *Journal of Pakistan Medical Association, 58*(4), 167-170.

Ingurgio, V. J. (1999). *The effect of state anxiety upon a motor task: An application of the cups catastrophe model* (Doctoral dissertation). University of Oklahoma, Oklahoma.

IRIN, Integrated Regional Information Networks (2004, September 20). Pakistan: no improvement in child rights, says NGO report. *IRIN News*. Retrieved from http://www.irinnews.org/report .asp?ReportID=34542&SelectRegion=Central_Asia&SelectCou ntry=PAKISTAN

IRIN, Integrated Regional Information Networks. (2008). *Pakistan: Corporal punishment key reason for school dropouts*. Retrieved from http://www.irinnews.org/Report/78275/PAKISTAN-Corpo ral-punishment-key-reason-for-school-dropouts

Khalid, R., & Hasan, S. S. (2009). Test anxiety in high and low achievers. *Pakistan Journal of Psychological Research, 24*(2). Abstract retrieved from http://www.pjprnip.edu.pk/vol_24w. html

Merritt, L., Richards, A., & Davis, P. (2001). Performance anxiety: Loss of the spoken edge. *Journal of Voice, 15*(2), 257-259.

Nauert, R. (2006). Anxiety more common in women. *Psych Central*. Retrieved on April 11, 2012, from http://psychcentral.com/news/2006/10/06/anxiety-more-common-in-women/312.html

Nausheen, M. & Richardson, P.W. (2010). The relationships between the motivational beliefs, course experiences and achievement of postgraduate students. In M. Devlin, J. Nagy, & A. Lichtenberg (Eds.), *Research and Development in Higher Education: Reshaping Higher Education*: *Vol. 33.Refereed papers from the 33rd HERDSA Annual International*

Conference (pp. 501–513). Melbourne, Australia. Retrieved from http://www.herdsa.org.au/wp content/.../HERDSA2010_ Nausheen_M.pdf

Rana, A. R., & Mahmood, N. (2010). The relationship between test anxiety and academic achievement. *Bulletin of Education and Research, 32*(2), 63-74.

Reyes, L. H. (1984). Affective variables and mathematics education. *Elementary School Journal, 84*, 558-581.

Robb, M. (2005). *Influences of anxiety on golf performance: A field test of catastrophe theory* (Doctoral dissertation). University of Missouri, Columbia.

Ruffins, P. (2007). A real fear: It's more than stage fright, math anxiety can derail academic or professional success, but some scholars are working to help students get over it. *Diverse Issues in Higher Education.Findarticles.com* (online) http://findarticles .com/p/articles/mi_ m0W MX/is_2_24/ai_n18744928/

Saleem, S. & Mahmood, Z. (2011).School children problem scale. *Pakistan Journal of Social and Clinical Psychology, 9,* 73-78. Retrieved from www.gcu.edu.pk/FullTextJour/ PJSCS/2011/12 .pdf

Sarwar, M. (2004). *Relationship of study attitude and academic performance of students at secondary level in Punjab* (Doctoral dissertation). University of Arid Agriculture, Rawalpindi.

Sena, Whitaker, Lowe, Patricia, Lu, & Steven. (2007). Significant predictors of test anxiety among students with and without learning disabilities. *Journal of Learning Disabilities*, *40*(4), 360-376.

SPARC, Society for the Protection of the Rights of the Child. (2004). *The state of Pakistan's children 2002.* Stock: Society for the Protection of the Rights of the Child.

Spielberger, C. D. (1980). *Test anxiety inventory.* Palo Alto, CA: Consulting Psychologists Press.

Spielberger, C. D. (2010). Test Anxiety Inventory. *Corsini Encyclopedia of Psychology*. 1. doi: 10.1002/9780470479216. corpsy0985Spielberger, C.D., & Vagg, P.R. (1995). Test anxiety: A transactional process. In Spielberger, C.D., Vagg, P.R. (Eds.), *Test anxiety: Theory, assessment, and treatment* (pp. 3-14).Washington, DC: Taylor & Francis.

Van Ameringen, M., Mancini, C., & Farvolden, P. (2003). The impact of anxiety disorders on educational achievement. *Anxiety Disorders, 17,* 561–571.

Vitasari, P., Abdul Wahab, M. N., Othman, A., Herawan, T., & Sinnadurai, S. K. (2010). The relationship between study anxiety and academic performance among engineering students. *Procedia Social and Behavioral Sciences, 8*, 490–497.

Yildirim, I., & Ergene, T. (2003). Social support, submissive acts and test anxiety as predictors of academic achievement among high school students. *Hacettepe University Journal of Education*, *25*, 224-234. Abstract retrieved from http://www.efdergi.hacettepe.edu.tr/english/abstracts/25/a28.ht m

Zaman, Q., Atif, M., Shah, H., Ayub, G., & Farooq, M. (2010). Key factors which cause the anxiety among the university students: A case study based on an event happened in Peshawar campus. *European Journal of Social Sciences, 16*(1), 87-96.

Zeidner, M. (1998). *Test anxiety: The state of the art.* New York: Plenum. doi: 10.1007/0-306-47145-0_3

Received July 11, 2011
Revision Received October 04, 2013