

## Emotional Intelligence as Predictor of Test Anxiety in Secondary Education Students

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### Abstract

This study examined the relationship between emotional intelligence and test anxiety in 335 secondary education students (154 boys, 181 girls). Their ages ranged from 14 to 17 ( $M= 15.85$ ,  $SD=1.47$ ). All respondents completed a questionnaire booklet containing two self-report measures: the Test Anxiety Inventory and the Emotional Intelligence Appraisal. Analysis confirmed a significant positive association between emotional intelligence and test anxiety. A significant negative correlation has been found between the scores on the Emotional Intelligence and the Test Anxiety.

**Keywords:** emotional intelligence, test anxiety

### Introduction

Test Anxiety is a complex and multidimensional construct comprising cognitive, physiological-affective and behavioral components that has been defined as an “emotional state experienced during examinations (consisting) of feeling of tension, apprehension, nervousness, and worry and associated psychological arousal resulting from activation of the automatic nervous system” (Chapell *et al.*, 1996; Spielberger, & Vagg, 2005; Putwain, Woods, & Symes, 1995; Putwain, Woods, & Symes).

Academic achievement tests are a common practice in contemporary educational institutions for making decision about students (Papantoniou, Moraitou, & Filippidou, 2011). Learner grades depend on how well they perform on these tests. As a result many children, adolescents and young people become anxious when presented with tests and almost all students experience anxiety test at least once in their academic life (Rothman, 2004; Zeidner, 1998; Birenbaum, & Nasser, 1994; Mathew, Tracy, & Scott, 2000). The prevalence rate of test anxiety has been reported by many researchers. According to numbers of different studies about 10% to 41% of elementary and secondary school students suffer from the effects of test anxiety (Whitaker Sena, Lowe, & Lee, 2007; Lowe *et al.*, 2008, Turner *et al.*, 1993).

Test anxiety, however, is a significant educational problem affecting many of students in school (Salend, 2011); This means, that millions of students regularly experience test anxiety to the extent that it affects their academic and future life. A meta-analysis of test anxiety data indicated that, test anxiety was prevalent phenomenon (Sipp, & Schwarzer, 1996). In order to explanation of test anxiety many models such as the drive, interference, cognitive-attention, dual-deficit, self-regulation, self-worth and transactional have been introduced (Hembree, 1988; Sarason, & Mandler, 1952; Sarason, Sarason, & Pierce, 1990; Wine, 1980; Carver, & Scheier, 1998; Covington, 1992; Spielberger, & Vagg, 1995).

Sarason (1984) proposed that the concept of test anxiety comprises 1) tension: emotional feelings that one experiences prior or during an exam. 2) worry: thoughts relative to exam performance. 3) test-irrelevant thinking: thoughts that divert the student's attention away from the exam itself. 4) bodily symptoms: psychological reactions prior or during test. Worry and irrelevant thinking are cognitive component whereby tension and bodily symptoms are considered into emotionality component (David, Brendan, & Gary, 2000).

In recent decades, emotional intelligence has produced considerable attention within and outside the field of behavior science (Dildar *et al.*, Bar-On, & Parker, 2000; Davies, Stankov, & Roberts, 1998). Salovey and Mayer (1990) provided an initial conceptual definition of emotional intelligence as "the ability to monitor one's own and other's feeling and emotion, to discriminate them and use this information to guide one's thinking and action".

Models of emotional intelligence tend to be either ability-based or a mixture of ability and personality traits. Ability models conceptualize emotional intelligence as a set of mental abilities which pertain to the accurate processing of emotionally relevant information (Mayer, 2001). In contrast; later theorists have conceptualized much broader models of emotional intelligence which combine emotional abilities with a variety of personality traits (Goleman, 2001). Mayer and Salovey (1997) considered the emotional intelligence a combination of four components: emotional perception, emotional facilitation, emotional understanding, and emotional management. Bar-On's model of emotional intelligence comprises an emotion-related ability such as stress and basic personality traits such as optimism (Bar-On, 1997).

The effect of test anxiety on academic achievement has interested researcher for year decades (e.g. Gaudry, Spielberger, 1971; Hembree, 1988; Seipp, 1991; Schwarzer, 1990; Cassady, & Johnson, 2002; Birjandi, & Alemi, 2010; Ranna, & Mahmood, 2010; Sub, & Prabha, 2003). Research has shown that students with test anxiety experience high levels of stress, lower level of self-efficacy, fear of failure, poor self-esteem and self-concept (Cizek, & Burg, 2006; Ergene, 2003; Turner *et al.*, 1993).

On the basis of the empirical literature, the variables have been shown is associated with test anxiety including, self- efficacy, classroom climate, study habits and locus of control (Akbariyoorang, & Aminiyazdi, 2009; McDonald, 2001; Kayglsl *et al.*, 2011; Carton, & Nowicki, 1996). Although these factors predict a significant proportion of variance in test anxiety, there are additional variables that have not been considered. One of these, however, factors is emotional intelligence.

There were two related objectives for the present investigation. The first goal was to study relationship between emotional intelligence and test anxiety among secondary education students in an Iranian sample. The second goal of this study was to evaluate the role of emotional intelligence in the prediction of test anxiety.

## **Methodology**

### ***Participants***

The participants in this study were 335 secondary education students (154 boys, 181 girls) at Galikesh city in Golestan province. Participant's mean age was 15.85 years (SD=1.47). They were from different fields of study and ethnic groups. The distribution of the participants was as follows: 33.4% were the tenth graders, 33.4% were the eleventh graders and 33.1% were the twelfth graders. Two hundred and thirty of the respondents were in the urban school, and 105 were in rural school.

### ***Measures***

**Test Anxiety Inventory:** is a 20-item multiple-choice self-report inventory that measures individual differences in test anxiety as a situation-specific personality trait (Spielberger, 1980).

Participants are asked to report how they experience symptoms of anxiety before, during, and after examination. Each symptom is rated on a 4-point scale ranging from 1(almost never), to 4(almost always). Evidence for the validity and the reliability of Persian versions of Test Anxiety Inventory has been reported for Iranian samples (Mousavi, Haghshenas, & Alishahi, 2008).

**The Emotional Intelligence Appraisal:** Based on Goleman's model of emotional intelligence, the Emotional Intelligence Appraisal, consists of 28 questions addressing self-awareness, (2) self-management, (3) social awareness, and (4) relationship management. The Emotional Intelligence Appraisal also is available in three different formats: a Me Edition (self-report), a MR Edition (in 360 degree format) and the Team Edition (Bradberry *et al.*, 2003). Each item is rated on a 6-point scale ranging from (1) never to (6) always. Each participant received a score in each of the four areas and in overall emotional intelligence. Evidence for the validity and the reliability of Persian versions of the Emotional Intelligence Appraisal has been reported for Iranian samples (Ganji, Mirhashemi, & Sabt, 2007).

### Results

Table 1 presents the means and standard deviations for the Test Anxiety Inventory and The Emotional Intelligence Appraisal scale for the boys and girls student. Sex differences on the scales were calculated using t-test and are depicted in table 1.

**Table 1. Mean and standard deviation of scales by sex**

Scale	Boy (n=181)		Girl (n=154)		t
	M	SD	M	SD	
Self-Awareness	76.88	9.78	75.69	8.10	N.S
Self-Management	64.41	8.43	63.97	7.42	N.S
Social Awareness	73.69	10.39	74.20	9.60	N.S
Relationship Management	68.83	9.60	68.55	8.40	N.S
Overall Emotional	71.80	8.60	70.60	9.10	N.s
Test Anxiety Inventory	16.30	9.10	17.20	10.50	N.s

As seen in the Table 1, there were no statistical differences on the Emotional Intelligence Appraisal and Test Anxiety Inventory across gender in this sample of respondents. Table 2 shows the Pearson correlations between Emotional Intelligence Appraisal, Test Anxiety Inventory and academic success level (GPA).

**Table 2. Correlation matrix for total sample (n=335)**

Scale	1	2	3	4	5	6	7
1. Self-Awareness							
2. Self-Management	.22**						
3. Social Awareness	.25**	.28**					
4. Relationship Management	.30**	.36**	.36**				
5. Overall Emotional	.56**	.75**	.64**	.74**			
6. Test Anxiety Inventory	.13*	-.22**	-.16**	-.10	-.15**		
7. GPA	.03	.04	.24**	.07	.13*	-.20**	

P\*\* < 0.01

P\* < 0.05

As seen in Table 2, scores on the Emotional Intelligence Appraisal with those on the academic success level (GPA) were significantly associated ( $r = .13$ ,  $P < 0.05$ ). A significant negative correlation has been found between the scores on the Emotional Intelligence Appraisal and the Test Anxiety Inventory ( $r = -.15$ ,  $P < 0.01$ ).

Stepwise regression analyses were used to identify the effects of components of the emotional intelligence on test anxiety. For these analyses, test anxiety was chosen as the dependent factor. The regression analysis results were reported in Table 3.

**Table 3. Summary of stepwise multiple regression analyses for variables predicting test anxiety**

Variable	$\beta$	SEB	P
<b>Step 1</b>			
Constant	25.006	1.991	.000
Self-Management	-.127	.30	.000
<b>Step 2</b>			
Constant	11.286	4.166	.007
Self-Management	-.153	.030	.000
Self-Awareness	.200	.054	.000
<b>Step 3</b>			
Constant	18.41	4.81	.000
Self-Management	-.13	.031	.000
Self-Awareness	.232	.054	.000
Relationship-Management	-.148	.052	.004

$R^2 = .052$  for step 1;  $R^2 = .090$  for step 2;  $R^2 = .11$  for step 3 ( $P < 0.001$ )

Stepwise multiple regression analysis for the entire sample was used to determine which combination of variables (self-awareness, self-management, social awareness, and relationship management) best predicts test anxiety. Self-management entered the equation first. In step 2, self-awareness scores were entered to the prediction of test anxiety. In the third step, relationship management was entered. The regression analyses with this model produced three predictor variables, Self-management, self-awareness, and relationship management, on test anxiety which accounted for 11% of the variance in predicting test anxiety. Social awareness is not predicting test anxiety.

### Discussion

The primary purpose of this study was to investigate the relationship between emotional intelligence and test anxiety among secondary education students. There are many variables that may have an influence on test anxiety. We saw that emotional intelligence was positively related with academic success level (GPA), while it was negatively related to test anxiety. This finding is consistent with the work of Castro-Johnson (2003), Parker et al (2004), and Márquez et al (2006).

Our findings replicate and confirm the result of previous studies (Gaudry, & Spielberger, 1971; Sub, & Prabha, 2003) which showed that test anxiety is associated with academic success level (GPA).

There were no significant differences between boy and girl students on test anxiety. This finding was inconsistent with the results reported by Berger & Schechter (1996), Everson et al (1993), and Volkmer & Feather (1991). This was consistent with the results reported by Mwamwenda (1993).

We saw that there are no significant differences in emotional intelligence (self-awareness, self-management, social awareness, and relationship management) between boy and girl students. These findings were consistent with the results reported by Almran(2008), and Depape et al (2006).

### Conclusions

In all, our study showed that almost 11% of the variance in test anxiety variable may be related to predictive variable of emotional intelligence. Implementing this research on secondary population was one of the limitations. In order to achieve more precise findings on relationship between emotional intelligence and test anxiety and to eliminate limitations of the present investigation it is suggested that more extended studies be done in different populations.

### References

- Akbaryboorang, M., Aminiyazdi, S.A. (2009). Test anxiety and self-efficacy: a study on the students of Islamic Azad university, branch of Southern Khorasan. *Ofogh-e- Danesh*, 15(4):70-77.
- Almran, J. I., & Punamaki, R. (2008). Relationship between gender, age, academic achievement, emotional intelligence, and coping style in Bahraini adolescents, *Individual Differences Researches*, 6(1):104-119.
- Bar-On, R., Parker, J.D. (2000). *The handbook of emotional intelligence: theory, development, assessment and application at home, school, and in the workplace*. San Francisco, CA: Jossey-Bass.
- Bar-On, R. (1997). *Emotional quotient inventory: technical manual*. Toronto, CANADA: Multi-Health Systems.
- Berger, R., & Shechter, Y. (1996). Guidelines for choosing an intervention package for working with adolescent girls in distress. *Adolescence*, 31: 709-717.
- Birjandi, P., Alemi, M. (2010). The Impact of Test Anxiety on Test Performance among Iranian EFL Learners. *Broad Research in Artificial Intelligence and Neuroscience*, 4(1): 44-58.
- Birenbaum, M., Nasser, F. (1994). On the relationship between test anxiety and test performance. *Measurement and Evaluation in Counseling and Development*, 27: 293-302.
- Bradberry, T., Greaves, J., Emmerling, R., Sanders, Q., Stamm, S., Su, L.D., West, A. (2003). *Emotional Intelligence Appraisal Technical Manual*. Talent Smart Inc.
- Carton, J. S., Nowicki, S., J.R. (1996). Origins of generalized control expectancies: Reported child stress and observed maternal control and warmth. *Journal of Social Psychology*, 136: 753-760.
- Carver, C.S., Scheier, M.F. (1998). *On the self-regulation of behavior* New York: Cambridge University Press.
- Cassady, J.C., Johnson, R.E. (2002). Cognitive test anxiety and academic performance. *Contemporary Educational Psychology*, 27 (2): 270-295.
- Castro-Johnson, M. (2003). Emotional Intelligence and Academic Performance of College Honors and Non-Honors Freshmen. *Journal of the National Collegiate Honors Council*, 10(1): 105-114.
- Chapell, M. S., Blanding, Z. B., Silverstein, M. E., Takahashi, M., Newman, B., Gubi, A., McCann, N. (2005). Test anxiety and academic performance in undergraduate and graduate students. *Journal of Educational Psychology*, 97: 268-274.
- Cizek, G. J., Burg, S. S. (2006). *Addressing test anxiety in a high-stakes environment: Strategies for classrooms and schools*. Thousand Oaks, CA: Corwin Press.
- Covington, M.V. (1992). *Making the grade: A self-worth perspective on motivation and school reform*. New York: Cambridge University Press.

- David, M., Brendan, B., Gary, A. (2000). An evaluation of the factor structure and predictive utility of a Test Anxiety Scale with reference to student's past performance and personality indices. *The British Journal of Educational Psychology*, 40 (1): 17-27.
- Davies, M., Stankov, L., Roberts, R.D. (1998). Emotional intelligence: in search of an elusive construct. *Journal of Personality and Social Psychology*, 75: 989-1015.
- Depape, A. R., Hakim-Larson, J., Voelker, S., Page, S., & Jackson, D. L. (2006). Self-talk and emotional intelligence in university students. *Canadian Journal of Behavioral Science*, 38: 250-260.
- Dildar, S., Bashir S., Shoaib, M., Sultan, T., Saeed, y. (2012). Chains do not hold a marriage together: emotional intelligence and marital adjustment (a case of Gujrat District, Pakistan). *Middle-East Journal of Scientific Research* 11 (7): 982-987.
- Ergene, T. (2003). Effective interventions on test anxiety reduction: A meta-analysis. *School Psychology International*, 24(3): 313-328.
- Everson, H. T., Tobias, S., Hartman, H., Gourgey, A. (1993). Test anxiety and the curriculum: The subject matters. *Anxiety, Stress, & Coping: An International Journal*, 6:1-8.
- Ganji.H., Mirhashemi, M., Sabt, M. (2007). Bradberry- Greaves' Emotional Intelligence Test: Preliminary Norming-Process. *Thought and Behavior in Clinical Psychology*, 2: 23-35.
- Gaudry, E., Spielberger, C. D. (1971). *Anxiety and educational achievement*. New York: Wiley.
- Goleman, D. (2001). An EI-based theory of performance. In C. Cherniss & D. Goleman(Eds.), *The emotionally intelligent workplace*. San Francisco, CA: Jossey-Bass. pp: 27-44.
- Hembree, R. (1988). Correlates, causes, effects, and treatment of test anxiety. *Review of Educational Research*, 58: 47-77.
- Huberty, T. J., 2009. Test and performance anxiety. *Principal Leadership*, 10(1):12-16.
- Kayglsl, S.L., et al. (2011). The relationship among test anxiety, study habits, achievement motivation, and academic performance among Turkish high school students. *Education and Science*, 36: 320-330.
- Lowe, P. A., Lee, S. W., Witteborg, K. M., Prichard, K. W., Luhr, M. E., Cullinan, C. M., Janik, M. (2008). The Test Anxiety Inventory for children and adolescents (TAICA). *Journal of Psycho educational Assessment*, 26(3): 215-230.
- Márquez, P.G., Martín, R.P., Brackett, M.A. (2006). Relating emotional intelligence to social competence and academic achievement in high school students. *Psicothema*, 18:118-123.
- Mathew, E., Tracy, B. D., Scott, W. D. (2000). The efficacy of eye moment desensitization and reprocessing therapy technique in the treatment of test anxiety of college students. *Journal of College Counseling*, 3(1): 36-49.
- Mayer, J.D. (2001). A field guide to emotional intelligence. In J. Ciarrochi, J. P. Forgas, & J.D. Mayer (Eds.), *Emotional intelligence in everyday life*. Philadelphia, PA: Psychology Press. pp: 3-24.
- Mayer, J.D., Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds.), *Emotional development and emotional intelligence: Educational implications*. New York: Basic Books.
- Mcdonald, A. S. (2001). The prevalence and effects of test anxiety in school children. *Educational psychology*, 89 (21): 89-101.
- Mousavi, M., Haghshenas, H., Alishahi, M. J. (2008). Effect of gender, school performance and school type on test anxiety among Iranian adolescents. *Iranian Red Crescent Society*, 10:4-7.
- Mwamwenda,T.S. (1993). Gender differences in test anxiety among South Africa students. *Perceptual and Motor Skills*, 76(2): 554.

- Papantoniou, G., Moraitou, D., Filippidou, D. (2011). Psychometric properties of the Greek version of the Test Anxiety Inventory. *Psychology*, 12(3): 241-247.
- Parker, J., Creque, R., Barnhart, D., Harris Irons, J., Majeski, S., Wood, L., Bond, B., Hogan, M., (2004). Academic achievement in high school: Does emotional intelligence matter? *Personality and Individual Differences*, 37(7): 1321-1330.
- Putwain, D. W., Woods, K. A., Symes, W (2010). Personal and situational predictors of test anxiety of students in post-compulsory education. *British Journal of Educational Psychology*, 80: 137-160.
- Ranna, R.K., Mahmood, D. (2010). The Relationship between test anxiety and academic achievement. *Bulletin of Education and Research*, 32(2): 63-74.
- Rothman, D. K. (2004). New approach to test Anxiety. *Journal of College Student psychotherapy*, 18(4): 45-60.
- Salend, S. J., 2011. Addressing test anxiety. *Teaching Exceptional Children*, 44(2): 58-68.
- Salovey, P., Mayer, J.D. (1990). Emotional intelligence. *Imagination, Cognition, and Personality*, 9: 185-21.
- Sarason, S, B., Mandler. G. (1952). Some correlates of test anxiety. *Journal of Abnormal and Social Psychology*, 47: 810-817.
- Sarason, I. G. (1984). Stress, anxiety, and cognitive interference: Reactions to tests. *Journal of Personality and Social Psychology*, 46: 929-938.
- Sarason, I. G., Sarason, B. R., Pierce, G. R. (1990). Anxiety, cognitive interference, and performance . *Journal of Social Behaviour and Personality*. 5:1-18.
- Schwarzer, R. (1990). Current trend in anxiety research. In P .J.D. Drenth, J.A. Sergeant,& R.J. Takens (Eds.), *European perspectives in psychology*. Chichester: John Wiley & Sons, pp:225-244.
- Seipp, B. (1991). Anxiety and academic performance: A meta-analysis of findings. *Anxiety Research*, 4: 27-41.
- Sipp, B., Schwarzer, C. (1996). Cross-cultural anxiety research: A review In C. Schwarzer &M. Zeidner (Eds). *Stress, anxiety, and coping in academic settings* .Tubingen, Germany: Frank-Verlag, pp: 13-68.
- Spielberger, C. D. (1980). *Test Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Spielberger, C. D., Vagg, P. R. (1995). Test anxiety: A transactional process model. In C. D. Spielberger & P. R. Vagg (Eds.), *Test anxiety: Theory, assessment and treatment*. Washington, DC: Taylor & Francis: pp: 3-14.
- Sub, A., & Prabha, C. (2003). Academic performance in relation to perfectionism, test procrastination and test anxiety of high school children. *Psychological Studies*, 48: 7-81.
- Turner, B. G., Beidel, D. C., Hughes, S., Turner, M. (1993). Test anxiety in African American school children. *School Psychology Quarterly*, 8(2): 140-152.
- Whitaker Sena, J. D., Lowe, P. A., Lee, S. W. (2007). Significant predictors of test anxiety among students with and without learning disabilities. *Journal of Learning Disabilities*, 40: 360-376.
- Wine, J.D. (1980). Cognitive-intentional theory of test anxiety. In I. G.Sarason(Ed.), *Test anxiety: Theory, research, and applications*. Hillsdale, NJ: Lawrence Erlbaum, pp: 349–378.
- Zeidner, M. (1998), *Test anxiety: The state of the art*. New York: Plenum.
- Volkmer, R.E.,& Feather, N.T. (1991). Relations between Types A scores, internal locus of control and test anxiety. *Personality and Individual Differences*, 12: 205–209.