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The Relationship Between Test Anxiety and Perceived Teaching Style. Implications and Consequences on Performance Self-Evaluation

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Abstract

The purpose of our research was to investigate the relationship between students' perceptions regarding different teaching styles adopted by teachers in their lectures and students' test anxiety. We have also investigated the relationship between test anxiety and students' future self-evaluation of academic performance. The study was conducted on a sample including 177 students with age between 19-50 years (M=23, SD=7.96). The results indicated no significant correlation between test anxiety and teaching style and a negative significant correlation between test anxiety and self-perception of evaluation.

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1. Introduction

Test anxiety has been defined as a distress state experienced when a person perceives an evaluative situation as threatening: they might anticipate failure or feel threatened by the situation when their behavior or performance could be perceived as poor. Even though everybody experiences occasional anxiety when evaluated (Gregor, 2005), test anxiety refers to a stable personality predisposition in evaluative situations (Hill & Wigfred, 1984). Chapell et al. (2005) apud Zeidner (1992) defines test anxiety as “the set of phenomenological, physiological, and behavioral responses that accompany concern about possible negative consequences or failure on an exam or similar evaluative

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situation". Taking this into consideration, researchers have concluded that test anxiety has a negative impact on academic performance. Simpson, Parker & Harrison (1995) suggested that a minimum degree of test anxiety might positively mobilize a student in evaluative situations so that he bypasses the distress state and finishes test tasks; on the other hand, a higher test anxiety might inhibit his working memory (Sarason, 1984) which implicitly leads to poor academic performance. These findings are sustained by recent data (Birjandi & Alemi, 2010; Sena et al, 2007; McDonald, 2001; Raffety, Smith & Ptacek, 1997) that confirm a negative correlation between test anxiety and academic performance. Test anxiety is induced in a greater extent by bio-psycho-social factors (Lee, 2008; Lowe & Lowe et al., 2008). The distinct way in which a person analyzes a testing situation causes test anxiety to manifest. Therefore, test anxiety might be determined by social, educational or environmental factors and by a person's positive or negative experiences with evaluative situations (Newstead, 1998). Elliot and McGregor (1999) stated that performance goals interfere with test anxiety. Setting high goals correlates with increased test anxiety due to fear of failure (Burger, 2006; Carver & Scheier, 1994). Perfectionism is a concept also strongly related to self-imposed performance standards. Sumi and Kanda (2002) identified a significant correlation between perfectionism and test anxiety, data also confirmed by Tasdemir (2003), Kirdok (2004) and Hanimoglu (2010) apud Kandemir (2013). Therefore, as higher as self-imposed performance standards are, as higher fear of failure will be (von der Embse & Hasson, 2012). Burns (1980) apud Kandemir (2013) describes perfectionists as people who evaluate themselves through success and efficiency, and in order to be more persuasive they often settle high performance goals that are hard to attain. Thence, self-evaluation is strongly related to every individual's level of perfectionism and performance goals. In addition, McGregor and Eliot (2002) concluded that the degree of realism used to set performance standards interferes with test anxiety. Beyond internal individual factors, the scientific literature findings suggest that test anxiety correlates with contextual factors such as: school environment (Goetz et al., 2008), evaluation method (In'nami, 2006) or teaching style (Newstead, 1998). Newstead's research (1998) shows differences in children's test anxiety levels when being taught in a traditional manner versus when the teacher adopts an alternative teaching method. Congruent to this data, a traditional teaching style will cause high levels of test anxiety whereas an alternative teaching style leads to low levels of test anxiety.

Taking this into consideration, our aim was to investigate the relationship between student's test anxiety and teacher's teaching style in lectures as well as the consequences on student's future self-evaluation of academic performance. The current study contributes to Adult Education by addressing an obstacle which might undermine students' lifelong learning: fear of evaluation and its relation to teaching style, goal setting, self-evaluation of future performance that impacts real academic performance. Becoming aware of these relationships might be a first step into improving the learning process.

2. Method

2.1. Participants

Our research was conducted on a sample of 177 participants, with ages ranging between 19-50 years ($M=23$, $SD=7.96$), 6 males and 171 females. All participants were students in Babes-Bolyai University, Faculty of Psychology and Science of Education, the Science of Education sector.

Participation in the investigation was voluntary and anonymous. Participation agreements, data confidentiality and other ethical aspects were assured.

2.2. Measures

The three variables (test anxiety, teaching style, and student's self-evaluation) of the current investigation were measured using the following instruments for data collection:

Test Anxiety was measured with Cognitive Test Anxiety Scale (Cassady & Johnson, 2001). The instrument evaluates the cognitive component of test anxiety containing 27 items on a Likert scale, with 8 items being inversed. Responses that indicated rational or irrational thoughts that occur in evaluative situations were scored on a 4 point Likert scale. The final score was divided into two major categories: low test anxiety and high (clinical) test anxiety. The high test anxiety was also divided into low-clinical, moderate-clinical and high-clinical.

Data regarding the questionnaire indicate a $\alpha = .86$ internal consistency and a strong predictive validity.

Teaching style was determined with a 4 Likert scale consisting of 27 items categorized on three dimensions according to existing teaching styles: (1) authoritative (score 15-21); (2) authoritative - democratic (authoritative score 10-15 > democratic score 10-15); (3) democratic - authoritative (democratic score 10-15 > authoritative score 10-15); (4) democratic- permissive (democratic score 10-15 > permissive score 10-15); (5) permissive- democratic (permissive score 10-15 > democratic score 10-15); (6) permissive (score 15-21).

Student's self-evaluation was determined with a form in which every student checked a grade ranging from 1 to 10. The grade was an estimation of a future exam result.

2.3. Research design

Our aim was to investigate the relationship between test anxiety and teaching style and test anxiety versus self-evaluation so we adopted a correlation design for establishing these connections.

2.4. Procedure

In the first stage all participants were informed about the purpose of the present investigation and about the instruments used to collect the data. To avoid any measuring error that might have been due to the data collection procedure, all participants were given a collective briefing before questionnaire completion. After this stage every participant had individually completed the form in a paper-pencil format.

All forms were given to the participants 30 minutes before an examination.

3. Results

The association between test anxiety and teaching style

We found no significant correlation between cognitive test anxiety and teaching style, the value of the Pearson correlation quotient was .105 ($p < .01$), as shown in table 1.

Table 1. The correlation between test anxiety and teaching style (N=177)

Variables	1. 1	2. 2
1. Teaching style	3. -	4.
2. Test anxiety	5. .105	6. -

The association between test anxiety and self-evaluation

We have also investigated the relationship between test anxiety and self-evaluation where students were asked to note a grade they would expect to get in the current evaluation. In this case we found a significant negative correlation with a quotient of $-.378$ ($p < .01$), as shown in table 2. Even though the Pearson correlation quotient is rather small, it appears that students with higher test anxiety tend to expect lower grades in evaluation conditions. This also shows in figure 1 which represents the correlation graph: on the X axis we represented the recoded cognitive test anxiety variable ranging from 1 to 4 and on the Y axis the self-perception of evaluation variable ranging from 1 to 10.

Table 2. The correlation between test anxiety and self-evaluation (N=164)

Variables	7. 1	8. 2
1. Self- evaluation	9. -	10.
2. Test anxiety	11. $-.378^{**}$	12. -

Furthermore, we have taken into consideration the test anxiety score means of different cases selected from teaching style variable. After analyzing the data we have identified four distinct categories. Therefore we analyzed the test anxiety score means of four cases: the democratic category (recoded as 1), the democratic-permissive category (recoded as 2), the democratic-authoritative category (recoded as 3) and the authoritative category (recoded as 4).

Table 3. The test anxiety means on teaching style cases

Teaching style cases	Cognitive test anxiety means	12
1. Democratic (N=93)	14. 70.62	12
2. Democratic-permissive (N=6)	16. 69.33	15
3. Democratic-authoritative (N=39)	17. 72.38	
4. Authoritative (N=39)	18. 72.33	

5. Discussion

Our study did not confirm an existing association between cognitive test anxiety and teaching style, but showed a significant correlation between test anxiety and self-evaluation supporting the results obtained in other research regarding self-perception and anxiety. Taking into consideration that our sample was chosen strictly from the Science of Education departments in different regions of our country, we conclude that in this area of specialization test anxiety does not associate itself with teachers teaching styles.

The insignificant correlation might be due to a series of cofounded variables that we have not investigated in this study, such as: self-esteem, locus of control or perfectionism as a personality trait (regarding students) or the different approach to teaching in this department – teachers adopting a more student-centered teaching style than in other departments.

The significant negative correlation between test anxiety and self- evaluation shows that students with high test anxiety will probably evaluate themselves poorer than students with low test anxiety. The results support the previous research in the field emphasizing that the high-anxious students would underappreciate their performance and have more negative self-evaluation whereas the students with low test anxiety would appreciate their performance more positively. Taking this into consideration we agree that self-evaluation should be a necessary component in school evaluations so that students learn to calibrate their negative beliefs to reality.

Furthermore we compared the cognitive test anxiety means of four different cases regarding the teaching style variable. Even though we have not found a significant correlation between test anxiety and teaching style, the democratic and the democratic-permissive cases have lower means of test anxiety than the democratic-authoritative and the authoritative cases which asks for further research in the field due to the fact that other departments might show significant correlation between these variables.

6. Limitations of the current study

The limitations of our research are the use of self-reports measures alone, the sample being selected only from the Science of education departments and of female predominance meaning that we do not have sufficient data to generalize our conclusions but to refer them to this department only, and the lacking validity data of the teaching style questionnaire used in the research. Furthermore, there might have been biases related to conditions under which the data was gathered due to the fact that teachers might be more aware of their teaching style taking into consideration that they teach in an Educational department. That way, they might adopt a more democratic and student centered teaching style than other teachers in departments not related to the Educational subject and this variable might have influenced the data gathering process.

7. Future directions of research

We conclude that this study should be extended to other departments of specialization and that auto efficacy, self-esteem, locus of control and perfectionism might show interesting results when paired with test anxiety.

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