



Investigation of the relationship between professional maturity and hope levels with test anxiety of twelfth-grade high school students

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Abstract. The essential objectives of the present research was to investigate the association between the professional maturity and hope levels with test anxiety of twelfth-grade students in high schools. A total of 700 twelfth class high school students who attend eight different types of high school in Trabzon province throughout the academic year (2016-2017) was recruited for this study. Relational and causal study methods were utilised in the study. Regarding data collection, the Professional Maturity Scale (PMS), State Hope Scale (SHS) and Test Anxiety Inventory (TAI) were selected. In order to analyze the gathered data, the SPSS 23.0 program was used. The relationships between the variables were evaluated by Pearson Moments Multiplication correlation coefficient and the predictive level of the variables was examined by hierarchical regression analysis. The results reveal that the students' test anxiety levels are related to professional maturity and hope, and these variables are important factors explaining the students' test anxiety.

Keywords: Professional maturity, hope, test anxiety

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INTRODUCTION

Everything made and designed by humans is known to fulfil our needs. Maslow (1954), who discovered people had a hierarchic system of needs resembling a pyramid as a result of clinical observations, stated that beginning at the lowest level of the pyramid were physical needs, security needs, love and belonging, and respect with self-actualization at the topmost point. Self-actualization is defined as an individual becoming aware of the potential they have from birth and living in an appropriate environment (Maslow, 1943). One way for an individual to reveal their potential is to choose an appropriate profession. Only when individuals have the opportunity to choose their profession in accordance with their potential can they be said to achieve professional satisfaction.

The high school years have determinative importance in terms of young people making decisions about the profession they will chose and is conceptualized as a critical time period (Crites, 1965). Students must determine which area they will advance towards and decide about professions they will chose in this area during this period. Hamamcı, Bacanlı and Doğan (2013) stated that as students reach the final class in high school and approach the university, they think more about selecting a profession, clarify their choices and make efforts to become more decisive about selecting a profession. Selecting a profession is an important decision affecting what type of life an individual will have, in addition to the profession itself, so individuals may experience anxiety as they choose their profession. In line with the personality traits of students, their discovered interests, abilities, information about professions and beliefs related to career processes, and clear and transparent levels of hope and expectation about the future contribute to the professional selection process. In Turkey, exams form one of the most crucial stages in selecting a profession. A concept evaluated to have a leading role in the process of selecting a profession is professional maturity, defined by Super (1980) as beginning in the research stage, extending to the collapse stage and the point reached through this process. Levinson, Ohler,

Caswell and Kiewra (1998) explained it as an individual making a realistic and appropriate professional choice based on their knowledge and skills. As understood from this, the concept of professional maturity encompasses the individual becoming aware of the need to decide about a profession and the dimension of compatibility of the decision between personality traits and the traits required by the profession. However, individuals may not have always clarified their interests and abilities. In this situation, an important stage in selecting a profession of the exam process may proceed with anxiety.

One of the concepts offering a broad view in relation to test anxiety is hope. In daily use hope means the emotion ensuring an individual believes that the results will be good in spite of insufficient potential and effort toward a wanted and expected end (Lazarus, 1999). Similarly, Miller (1985) qualified hope as an emotion forming from desires and expectations and stated it showed intuitive qualities. Hope also contributes to an individual revealing their potential. Hope is the most valuable resource that humanity has carried since it came into existence and ensures we have the ability to cope with loneliness, and difficult and stressful situations. Snyder, Feldman and Rond (2002) dealt with hope as being targeted toward an aim, forming a hierarchic system of beliefs about the ability of the individual to successfully connect to this cognitive process.

In Turkey, students in the twelfth grade experience one of the most challenging and substantial times in their lives during university exams. Data in the study were collected from students included in a two-stage exam system called Transition to Higher Education Examination (YGS) and Undergraduate Placement Exam (LYS). However, the exam system was changed in 2018 and exams were collected under a single heading. Though the name and content changed, the effect of the exam on human life can be said to remain the same. In other words, students determine the department they will choose, and in all likelihood their future profession, according to the points received on the exam. Students looking hopefully toward the future is important for all development areas led by academic success. As a result, students gaining a positive view related to their experiences seems to be crucial for both psychological health status and plans and decisions about the future and efforts to achieve these.

In Turkey, the success of individuals is measured with exams beginning in primary school and continuing to selection of a profession. After primary school there is the High School Transition Exam (LGS), after high school there is the Transition to Higher Education Examination (YGS) and Undergraduate Placement Exam (LYS) and after university there are exams like the Public Personnel Selection Exam (KPSS) which an individual must face on the road to obtaining a profession. The university entrance exams, forming a significant source of stress in Turkey, are completed in two sessions of the YGS and LYS and are repeated every year. As a result, test anxiety is a topic continuously on the agenda. Test anxiety in situations of evaluation involves an individual feeling fear and nervousness (Erözkan, 2004). An important example of state anxiety, there is not common consensus in the literature about who first researched test anxiety and when. Though there are differences of opinion, it was probably first researched in 1914 (Folin, Demis and Smillie, 1914 cited in Stöber and Pekrun, 2004, p. 205); however, the opinion that Sarason and Mandler added it to the literature as a scientific concept in 1952 is accepted by most. Uncertainty involved in tests causes increased anxiety (Keskin, 2001). With the increase in anxiety, variations occur in both cognitive and physiologic structure (Friedman and Bendas-Jacob, 1997; Liebert and Morris, 1967). As a result, test anxiety is evaluated in two categories according to how it is experienced as “worry” and “emotionality”. The *worry* dimension is characterized by a person feeling they are a failure and insufficient. In other words, the individual does not feel ready for the exam, believes they lack knowledge and displays a suspicious attitude about their abilities. Due to the intensity of these thoughts, the individual may have difficulty focusing and have to deal with distraction. Cassady and Johnson (2002) defined the worry dimension as an internal dialogue completed before, during and after the tasks required to evaluate an individual. Hembree (1988) stated that the clear traits of people with high levels of worry were comparing their performance with their peers, considering they will experience the situation of failing, having low feeling of security about their performance, excessive worry, embarrassment in front of their family, feeling unprepared

for the test and loss of self-esteem. Additionally, the cognitive process is asserted to a common factor in academic performance. *Emotionality* including the emotional components of anxiety emphasizes variations occurring in the body owing to stimulation of the autonomic nervous system. Body reactions like increased heart rate, palpitations, sweating, sudden increase in body temperature and then shivering, blushing, stomach pain and nausea, irritation, tense muscles, dry mouth, panic, fatigue and sleep disorders may occur (Spielberger and Vagg, 1995, p. 78). The anxiety experienced may prevent students from revealing their full potential and sometimes even cause the end of their learning life. Anxiety also has a negative impact on targets related to the future and thoughts about deciding on a profession and may be displayed as incompatibility with the school environment. In fact, the study by Hamamcı and Çoban (2016) concluded irrational beliefs about profession selection predicted professional indecision and professional maturity. Students experiencing test anxiety display a tendency to worry about their insufficiencies and possible failures. They believe these negative thoughts and become so removed from reality that they may become unable to follow instructions. Especially in times of exams, it is thought these schemas are active and cognitive distortions are intensely used. The result of this confusion is that they may not fully see the information provided in questions or make misinterpretations about questions. Additionally, as anxiety increases, they may experience difficulty remembering what they have learned (Cassady, 2004). Thus, test performance is negatively affected and the result obtained will be seen as evidence that this cognitive distortion was correct for future evaluation processes.

In situations where students have not discovered their interests and skills or do not have information about the characteristics required by professions, it is considered their anxiety levels related to exams will increase. Hope levels related to the exam process and the future are predicted to affect test anxiety. It is expected the present research will benefit psychological counselors in organizing individual and group studies about test anxiety. Additionally, it is thought to form a guide for teachers, school administrators, and parents of students involved in the education-teaching process.

In line with this information, the main objective of the present study was determined as investigation of the degree to which test anxiety levels of twelfth class students entering university exams are associated with professional maturity and hope levels. In line with this aim, the following hypotheses were tested:

1. There is a significant interaction between professional maturity and hope levels with test anxiety.
2. Professional maturity and hope levels predict test anxiety.

METHOD

Research Model

The research was designed in accordance with the quantitative research method of the relational screening model. The relational screening model aims to understand human behavior by providing information about the presence and degree of relational types (Büyüköztürk, 2008). In order to investigate the correlations between two or more variables, relational research ensures evaluation and prediction of correlations between variables (Cohen, Manion and Morrison, 2007).

Research Group

This study, in the relational research type, was completed in 8 different types of high school (Science High School, Social Sciences High School, Anatolian High School, Vocational and Technical High School, Multiprogram Anatolian High School, Anatolian Religious High School, Sports High School and Fine Arts High School) located in Trabzon province in the 2016-2017 education-teaching year. A total of 700 high school students, 378 female (54%) and 322 male (46%), attending twelfth class took part in the research.

Data Collection Instruments

Professional Maturity Scale (PMS)

The Professional Maturity Scale was prepared to measure the professional maturity levels of high school students (Bacanlı and Kuzgun, 2005). The scale items were developed by Kuzgun, with other psychometric studies performed by Bacanlı. The Cronbach alpha coefficient measuring consistency was found to be .89. The consistency level found with the test-repeat test method was found to be .82. The scale is a 5-point Likert type comprising 40 items. These items encompass professional maturity in terms of wanted and unwanted aspects (Bacanlı and Kuzgun, 2005).

State Hope Scale (SHS)

The SHS was developed by Snyder et al. (1991) with the goal of determining the state hope levels of individuals aged fifteen years and older and has 4-point Likert type. It comprises 12 items and 2 subdimensions. The subdimensions are called *alternative pathway thinking* and *agency thinking* and each is measured with four items. One of these four items refers to statements about the past, two include statements about the present and one has a statement about the future. The other four items are filler items. The internal consistency coefficients for the original study were .71 to .76 for agency thinking, .63 to .80 for alternative pathways thinking and .74 to .84 for the whole scale (Snyder et al., 1991). The scale was adapted to Turkish by Tarhan and Bacanlı (2015) and construct validity was investigated with exploratory and confirmatory factor analysis. The results of the analyses identified the Turkish form of the scale had a two-factor structure like the original. Confirmatory factor analysis calculated the fit indices as GFI = .96, AGFI = .92, RMR = .08, NNFI = .94, RFI = .90, CFI = .96 and RMSEA = .077. The Turkish form of the scale is an 8-point Likert type comprising 12 items.

Test Anxiety Inventory (TAI)

This inventory was developed by Spielberger and Vagg (1975) at the end of a five-year research process for a group of doctoral students. It is a psychometric scale using the self-report method. Adaptation studies for the inventory were completed by Öner and Albayrak Kaymak (1990). Accordingly, though the correlation with the English form is low, median correlations for the whole test did not fall below 46 and did not fall below 43 for subdimensions. The same research stated the correlations between the worry and emotionality subtests of the Test Anxiety Inventory and the state anxiety points varied from 45 to 60 levels. There are two subdimensions called “worry” and “emotionality”. The inventory has 4-point Likert type and comprises 20 questions.

Data Collection

Before collecting data, permission was obtained by e-mail from the experts developing and adapting the Professional Maturity Scale, State Hope Scale and Test Anxiety Inventory to Turkish. Later necessary official permissions were granted by the Ministry of National Education Trabzon Provincial Directorate of National Education Research Development Unit for the schools determined in the province and counties. Then ethics committee permission was granted by KTU Social and Human Sciences Ethics Committee.

Analysis of Data

Analysis of the obtained data used the SPSS 23.0 (Statistical Packet for Social Sciences) program with the Pearson Moment multiplication correlation coefficient technique and the hierarchic regression analysis technique. To determine the statistical processes to be used within the scope of the study, firstly investigations were performed about whether the data obtained from the scales used displayed normal distribution or not. In line with this, the skewness and kurtosis values for the scale tools are displayed in Table 1.

Table 1. Skewness and kurtosis coefficients related to scale tools

	N	Min.	Max.	Mean	Sd	Skewness		Kurtosis	
						Value	Error	Value	Error
PM	700	96	145	121.05	7.08	-.30	.09	.70	.18
HAPTSD	700	4	32	25.02	5.18	-.74	.09	.27	.18
HATSD	700	4	32	22.81	5.03	-.64	.09	.67	.18
H	700	8	64	47.84	9.22	-.64	.09	.44	.18
TAWSD	700	8	32	16.25	5.08	.47	.09	-.33	.18
TAESD	700	12	48	26.01	7.44	.32	.09	-.26	.18
TA	700	20	77	42.26	11.90	.37	.09	-.32	.18

PM: Professional maturity; HAPTSD: Hope Alternative Pathway Thinking subdimension; HATSD: Hope Agency Thinking subdimension; H: Hope; TAWSD: Test Anxiety Worry subdimension; TAESD: Test Anxiety Emotionality subdimension, TA: Test Anxiety

When Table 1 is investigated, the skewness values were -.30 for professional maturity, -.74 for the hope alternative pathway thinking subdimension, -.64 for the hope agency thinking subdimension, -.64 for hope, .47 for the test anxiety worry subdimension, .32 for the test anxiety emotionality subdimension and .37 for test anxiety. The kurtosis values were .70 for professional maturity, .27 for the hope alternative pathway thinking subdimension, .67 for the hope agency thinking subdimension, .44 for hope, -.33 for the test anxiety worry subdimension, -.26 for the test anxiety emotionality subdimension and -.32 for test anxiety. These values are understood to be between -1.5 and +1.5. The results of the evaluation found the data abided by normal distribution and parametric analysis techniques were used to test the research data.

RESULTS

As a result of Pearson moment multiplication correlation coefficient analysis with the aim of identifying the correlation between variables, there were positive significant correlations between professional maturity and hope ($r = .14$, $p < .01$) and the subdimensions of hope of alternative pathway thinking ($r = .15$, $p < .01$) and agency thinking ($r = .10$, $p < .01$). Additionally, there were negative significant correlations documented between professional maturity ($r = -.17$, $p < .01$) and test anxiety and the subdimensions of worry ($r = -.17$, $p < .01$) and emotionality ($r = -.15$, $p < .01$). Finally, there were negative significant correlations identified between hope with test anxiety ($r = -.32$, $p < .01$) and the test anxiety subdimensions of worry ($r = -.34$, $p < .01$) and emotionality ($r = -.29$, $p < .01$). In line with these findings, the first hypothesis in the research was confirmed and negative significant correlations were documented between professional maturity and hope with test anxiety.

Table 2. Correlations between professional maturity, hope and test anxiety

	1	2	3	4	5	6	7	Ort.	Ss.
1. PM	1							121.05	7.08
2. HAPTSD	.15**	1						25.02	5.18
3. HATSD	.10**	.63**	1					22.81	5.03
4. H	.14**	.91**	.90**	1				47.84	9.22
5. TAWSD	-.17**	-.31**	-.29**	-.34**	1			16.25	5.08
6. TAESD	-.15**	-.25**	-.27**	-.29**	.80**	1		26.01	7.44
7. TA	-.17**	-.29**	-.29**	-.32**	.93**	.97**	1	42.26	11.89

** $p < .01$; PM: Professional maturity; HAPTSD: Hope Alternative Pathway Thinking sub dimension; HATSD: Hope Agency Thinking sub dimension; H: Hope; TAWSD: Test Anxiety Worry sub dimension; TAESD: Test Anxiety Emotionality sub dimension, TA: Test Anxiety

Hierarchic regression analysis was performed to obtain results about prediction of the dependent variable in the research of test anxiety. Completed in two steps, hierarchic regression analysis used the variable of professional maturity in the first step and the sub dimensions of

hope of alternative pathway thinking and agency thinking in the second step. In the first step, it appears the coefficient specific to the professional maturity variable was significant within the model ($\Delta R^2 = .026$, $F_{1/698} = 19.778$, $p < .01$). The contribution of the professional maturity variable ($B = -.166$, $p < .01$) to the model was observed to be statistically significant.

In the second step, the sub dimensions of hope of alternative pathway thinking and agency thinking were entered into the model and it was documented that the total contribution to the model was significant ($\Delta R^2 = .116$, $F_{3/696} = 31.641$, $p < .01$). Additionally, the specific contributions of alternative pathway thinking ($B = -.162$, $p < .01$) and agency thinking ($B = -.177$, $p < .01$) to the model were found to be significant. The data related to the analysis results are demonstrated in Table 3.

Table 3. Hierarchic regression analysis for prediction of test anxiety

Model	Predictor	R	R ²	ΔR^2	F	df	B	B	P
1	(fixed PM	.166	.028	.026	19.778	1/698	-.279	-.166	.00*
2	(fixed) PM HAPTSD HATSD	.346	.120	.116	31.641	3/696	-.208 -.372 -.420	-.124 -.162 -.177	.00* .00* .00*

* $p < .01$; PM: Professional maturity; HAPTSD: Hope Alternative Pathway Thinking sub dimension; HATSD: Hope Agency Thinking sub dimension

DISCUSSION and CONCLUSION

In this research, in light of conceptual information, hypotheses related to the correlation of professional maturity and hope levels with text anxiety levels among high school final year students were determined and statistical analyses were performed in line with these hypotheses. In line with this, the status of high school final year students in terms of professional maturity and hope were concluded to be negatively associated with test anxiety. Additionally, there were positive significant correlations identified between professional maturity with hope and the sub dimensions of hope of alternative pathway thinking and agency thinking. Linked to this result, as professional maturity levels increased, it appears hope levels will increase.

In the research professional maturity significantly predicted anxiety related to exams; as professional maturity levels increased it was identified that test anxiety reduced. In the literature, there are no studies found directly supporting the findings obtained by studying professional maturity and text anxiety together. However, this result is line with findings of previous studies about career decision-making, career indecision and anxiety. A study by Sekmenli (2000) investigating the professional maturity levels and state anxiety levels of high school first year students in terms of some variables indicated the presence of a negative significant correlation between professional maturity and state anxiety. Professional maturity was defined by Super (1980) as an individual being aware of their own skills and abilities, having knowledge about work and making career decisions by matching their own features with work features. In the literature, studies investigating the correlation between career indecision and anxiety emphasized the presence of a positive correlation between the two variables (O'Hare and Tamburri, 1986; Saunders, Peterson, Sampson and Reardon, 2000). According to the findings of these studies, difficulties experienced when making career decisions cause increased anxiety levels. Similarly, Peng (2001) reported a reduction occurred in anxiety levels among participants in a career counseling group. Research by Campagna and Curtis (2007) found correlations between anxiety and career decision-making. However, in this research anxiety predicted the career decision variable and as anxiety level increased the decision-making process related to career became more difficult. In addition to these studies, there are other studies stating there is a correlation between anxiety and career indecision (Fuqua, Seaworth and Newman 1988; Gribben and Keitel, 1992). Another study investigating the

correlation between state and trait anxiety with career decisions by Mojgan, Kadir and Soheil (2011) documented that anxiety predicted career decisions to a significant degree. According to the results of this research there was a positive significant correlation between state and trait anxiety and career indecision. Additionally, there was a stronger correlation between trait anxiety and career indecision compared to state anxiety. Contrary to this, Campagna and Curtis (2007) reported state anxiety was a stronger indicator of career indecision. The presence of high competition to enter universities in Turkey and gain employment has led to individuals who have not gained skills about career decision-making and future planning experiencing indecision and anxiety about the future. Currently students are offered many career choices and are expected to make mature choices at young ages. One of the most important choices in life of the "career decision" becomes complicated in situations where the person's awareness about their abilities and interests and information levels about occupations are insufficient which may increase anxiety levels. Due to these situations, it is considered that studies to increase professional maturity levels will directly contribute to reducing test anxiety.

The results of the research obtained findings about the correlation between hope and test anxiety. With a strong effect on the life of the individual (Moore, 2005), hope significantly predicts test anxiety. In other words, an individual with high levels of hope will have less test anxiety. In the literature, there was no study encountered dealing with hope and test anxiety levels of high school final year students. However, this finding is supported by a variety of studies revealing correlations between hope, hopelessness and anxiety. When examined conceptually, there was no study found documenting no correlation or a positive correlation between hope and anxiety. However, in accordance with the findings of this study, there are many studies revealing that interventions to increase hope reduce symptoms of anxiety (Benight and Bandura, 2004; Dutton, 2009; Jaycox, Zoellner and Foa, 2002; Kilpatrick, Ruggiero, Acierno, Saunders, Resnick and Best 2003). Consistent with these studies, a study of cancer patients by Ho, Rajandram, Samman, Chan, McGrath and Zwahlen (2011) identified that hope and optimism variables significantly affected anxiety. In research about protective factors to reduce suicide, Meadows, Kaslow, Thompson and Jurkovic (2005) revealed that one of two factors ensuring individuals held onto life was hope. In addition to these results, a study investigating the correlation between the sub dimensions of hope and anxiety (Arnau, Rosen, Finch, Rhudy and Fortunato, 2007) showed a significant correlation between alternative pathway thinking and anxiety, with no findings about the presence of a correlation between agency thinking and anxiety. Hope, linked to happiness, perseverance and health (Peterson, 2000), is an important source of motivation related to people taking action in line with their targets and sustaining this action. As a result, the presence of hope aids in keeping the effect of stress on mental, behavioral and physical health under control (Goldsmith, Pellmar, Kleinman and Bunney, 2002). Moving from here, hope is predicted to act as a bridge between test and test-related beliefs. Additionally, as the hope levels of an individual increase, it can be said their resilience in the face of situations which must be overcome will be similarly high. In Turkey, youths in final year of high school are faced with a developmental duty that they are expected to overcome. Considering that the levels of readiness and courage have an undeniable place in fulfilling this duty, hope is considered to play an important role in an individual having the courage to feel ready and be able to succeed. Due to the reasons mentioned above, it is predicted that the hope factor, believed to have ameliorating and balancing functions, will be an irreplaceable element in test anxiety intervention programs.

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