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Welcome to the Volume 15, Issue 2 of IJONTE,

In this issue there are 7 articles. Our journal has been published for over 15 years. It has been followed by many people and a lot of articles have been sent to be published. Articles have been sent to referees for forthcoming issues. They will be published according to the order and the results. Articles are sent to referees without names and addresses of the authors. The articles who get positive responses will be published and the authors will be informed. The articles who are not accepted to be published will be returned to their authors.

We wish you success in your studies.

We wish you health, hope to meet again in the next issue of IJONTE.

Cordially,  
December, 2024

Editor in Chef  
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<b>Contact Addresses.....</b>	<b>i</b>
<b>Abstracting &amp; Indexing... ..</b>	<b>i</b>
<b>Editor, Associate Editors, Editorial Board .....</b>	<b>ii</b>
<b>From Editors.....</b>	<b>iii</b>
<b>CONTENTS.....</b>	<b>v</b>
<b>01. Development of an Intercultural Awareness Scale for Students in an Educational Environment with Different Cultures: A Study on Validity and Reliability.....</b>	<b>142</b>
Ceren KARAKOÇ, Gökhan AKSU - Türkiye	
<b>02. Evaluation of Uncertainty Experienced in Schools Within the Context of School Objectives.....</b>	<b>157</b>
Emine Doğan, Ruhi Sarpkaya – Türkiye	
<b>03. Effectiveness of Guided Inquiry Learning Strategies on Middle School Students' Achievement and Science Self-Efficacy .....</b>	<b>176</b>
Gamze KIRILMAZKAYA - Türkiye	
<b>04. The Peace Education Activities Suggestions for Children with Circle Time Practices .....</b>	<b>187</b>
Hakan USAKLI, Zeynep EREN – Türkiye	
<b>05. The The Relationship Between School Principals' Personality Traits and Teachers' Psychological Well-being .....</b>	<b>199</b>
Mehmet YILMAZ, Tuğba HOŞGÖRÜR - Türkiye	
<b>06. The Mediating Role of Psychological Well-Being in the Relationship Between Teachers' Career Burnout and Couple Burnout.....</b>	<b>213</b>
Hazal KARAKUŞ, Burhan ÇAPRI - Türkiye	
<b>07. Academic Staff Satisfaction Scale: Validity and Reliability Study .....</b>	<b>225</b>
Ertuğ CAN , Şenol SEZER – Türkiye	



## Development of an Intercultural Awareness Scale for Students in an Educational Environment with Different Cultures: A Study on Validity and Reliability

Ceren KARAKOÇ<sup>1</sup> and Gökhan AKSU<sup>2</sup>

### Abstract

This study aims to develop a valid and reliable scale that can measure the intercultural awareness level of students in an educational environment with different cultures. For this purpose, the data obtained from a total of 535 students studying in grades 5-6-7 and 8 were included in the analysis by random sampling method. In this study, which was carried out in the general survey model, one of the quantitative research methods, 45 questions in the item pool prepared in three sub-dimensions as cognitive, affective, and psychomotor domains were presented to the expert opinion, and the evaluation results from the experts were analyzed with the Davis technique and 19 items were removed and it was decided to keep 26 items in the trial form. As a result of the exploratory factor analysis carried out to provide evidence for the construct validity of the measurement tool, 14 items in different dimensions and determined to be overlapping were removed from the analysis were carried out, and thus a structure consisting of three dimensions and a total of 12 items was reached. Confirmatory factor analysis was performed to examine the model-data fit of the obtained structure and it was determined that the model had a high fit. The two-half reliability coefficient of the measurement tool was determined as 0.74. Based on these findings, it was concluded that the Intercultural Awareness Scale is a valid and reliable measurement tool and teachers can use the developed measurement tool to measure the level of intercultural awareness in the classroom.

**Keywords:** Interculturalism, Awareness, Scale development

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### Introduction

In an educational environment with different cultures, it is important for individuals to understand the impact of their cultural structures and to develop their sociocultural awareness. The perspective of the study is based on the development of a valid and reliable scale that can measure students' intercultural awareness levels. Cultural differences, the importance given to communication in a society, the perception of time, social relations, etc. require a long and gradual learning process as it covers a large number of issues. The first of these stages is to get rid of one's own cultural boundaries and to realize that there are cultural norms and values beyond one's own cultural characteristics. The next stage is to analyze the dynamics of differences by making efforts to reduce the negativities such as miscommunication, misinterpretation, misevaluation, etc. in intercultural issues. At the last stage, when the individual has the ability to establish and maintain positive interaction on the basis of needs and goals related to cultural differences, adaptation comes into question (Diller, 2007). In the context of this definition, cultural structures (religion, language, race, food and drink, clothing, art, sports, science,

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etc.) are consciously or unconsciously transferred to each other as regions communicate with each other. Due to a number of reasons experienced over time, cultural diversification has come into question due to the coexistence of people from different cultures. One of the important consequences of cultural diversification is that it makes it essential to recognize and understand other cultures.

The presence of interpersonal contact among individuals is a defining characteristic of a social environment. Since schools and classrooms are the most fundamental social environments for students, they will rank highest on the list of locations where intercultural awareness is thought to be necessary. To manage the cultural diversity seen in any educational setting, it is crucial to make sure that intercultural methods and sensitivity to differences are included into the national education system (Ece, 2019). In terms of structure, Turkey is home to a variety of cultures, but immigration in particular since 2011 has led to a rise in cultural diversity in the nation. Given that one million of these migrants are estimated to be primary school students (primary and secondary school), it is projected that the migration wave will have an impact on public spaces like classrooms and schools (Migration Management, 2019; UNICEF, 2017). Currently, the majority of these kids are being taught in institutions connected to the Ministry of National Education (MoNE). However, they are exposed to many problems such as language barrier, cultural adaptation problems, social exclusion and economic difficulties (Selçuk, Güzel & Buz 2021; Aydeniz & Sarıkaya, 2021; Erol, Özdemir & Erol, 2021; Işık, Bahat, Öncüler & Özdemir, 2021). On the other hand, insufficient reflection of cultural diversity in schools causes migrant children to feel that they do not belong (Sakız, 2016). Furthermore, plans have been made to guarantee all of these kids' education in the upcoming years. Understanding the cultural traits of students is crucial to ensuring that they may express themselves freely (Ogbu, 1992; Taylor & Fox, 1996; Rengi & Polat, 2014; Burak, Amaç, Doğan, Duran, Yıldırım, & Uzun, 2020). The purpose of this study was to ascertain the level of intercultural awareness among students who are learning alongside people from other cultural backgrounds.

In the literature, interculturality is a concept that refers to the interaction in cultural encounter situations (Kartarı, 2014), while intercultural awareness is defined as a part of intercultural communication skills. It is defined as the active desire to create one's own motivation to be understood, accepted and appreciated (Ece, 2019). The concept of intercultural understanding as a dynamic process in which people with different cultural backgrounds interact with each other through knowledge, awareness and emotional interaction is also emphasized in the definitions (Perry & Southwell, 2011; Walton, Priest, & Paradies, 2013; Denson, Ovenden, Wright, Paradies, & Priest, 2017). In addition to these definitions, the 'Intercultural Awareness Scale' developed by Rozaimie Rozaimie, Shuib, Ali, Oii & Siang (2011) consists of cultural awareness dimension, perceived cultural awareness dimension, cultural communication awareness dimension (Rozaimie et al., 2011, cited in Karabuğa Yakar & Ecevit Alpar, 2017). Similarly, the intercultural communication competence model developed by Chen and Starosta consists of intercultural awareness, sensitivity and effectiveness dimensions (Chen & Starosta, 1996). Therefore, although there are different names for the sub-dimensions of interculturality, it can be defined as a broad-based concept with cognitive, affective and behavioral sub-fields in Bloom's taxonomy (Burak et al., 2020). In line with the literature review of the developed 'Students' Intercultural Awareness Scale in an Educational Environment with Different Cultures', the intercultural awareness factor was addressed in three sub-dimensions as cognitive, affective and behavioral dimensions.

It was found in the literature review that various phenomena can be measured using instruments that fall under the definition of "intercultural." A few of these instruments were created to gauge how multiculturalism was perceived by educators or those preparing to become educators (Toprak, 2008; Ayaz, 2016; Yıldırım & Tezci, 2017). A number of measures were developed to assess pre-service teachers' preparedness for culturally sensitive education (Karataş & Oral, 2017), their proficiency with cultural diversity in the classroom (Burak et al., 2020) or their perceptions of various cultures by preschool instructors (Şentuna, 2011). Furthermore, studies have provided instruments to assess students' perceptions of intercultural interactions in higher education (Aliyev, 2011) and intercultural communication anxiety (Ay, Kavuran, & Türkoğlu, 2018). There was not one tool identified in the literature research that may be used to assess Turkish students' intercultural awareness. Given that

primary school-aged immigrants make up the majority of those in the learning age group, it was believed that a valid and reliable instrument to assess primary school kids' intercultural awareness was necessary. This kind of test will be used to assess the intercultural awareness of elementary school pupils and assess the state of the field today. Notwithstanding these requirements, millions of immigrant students are participating in micro-level classes where there is a cultural exchange, which is rather novel for Turkey (Burak et al., 2020). A person with a high level of intercultural awareness also respects and modifies other people's behaviors. In this regard, intercultural sensitivity and the capacity to recognize one's place in the global world ought to be taught in schools. Stated differently, intercultural sensitivity refers to the intercultural comprehension that empowers students to engage productively in cross-cultural interactions (Ece, 2019). Because of this, this study was conducted in order to develop a valid and reliable scale with measurement results, accounting for elements such as the fact that the primary goal of a multicultural educational environment is to aid in the creation of a tool that can gauge the degree of intercultural awareness necessary for a productive learning environment.

### **Method**

In this part of the research, information is given about the type of study, data collection and analysis of the data.

#### **Research Design**

This study aims to develop a valid and reliable scale that can measure the intercultural awareness levels of students in an educational environment with different cultures. This study, which aims to develop a valid and reliable intercultural awareness scale for secondary school students, was conducted with the general survey model from quantitative research methods. The general survey model is a research model in which a smaller sample, which is thought to represent the universe, is used in order to reach a general opinion or judgment about a universe consisting of a large number of elements (Karasar, 2011). The reason why the survey model was preferred in this study is that it enables the use of techniques such as representativeness, descriptivity, standardization, generalizability, quantitative data collection and structural analysis (Gençtanirim, 2014; Güvendir & Özkan, 2015; Orçan, 2018; Kanten & Arda, 2020).

#### **Participants**

While determining the study group of this research, it was aimed to reach students studying in a secondary school where different cultures coexist. In this context, 550 students studying in a secondary school in Izmir province were determined as the study group. The study group consisted of a total of 535 students studying in the 5th, 6th, 7th and 8th grades through convenience sampling, as they were close to the research and easy to access and provided speed to the researcher (Dawson & Trapp, 2001). Of the students participating in the study, 54.20% (n=290) were female and 45.80% (n=245) were male. Scale scores of 15 students were not included in the analysis due to incomplete and incorrect fillings. The study group is deemed sufficient because the requirement of having 10 times as many participants as the number of items established by Tavşancıl (2006) was satisfied.

Intercultural awareness is the conscious effort to develop one's own drive to recognize, accept, and value cultural differences. It is a component of intercultural communication skills (Ece, 2019). The primary goal of the research's study group, which is made up of secondary school students, is to ascertain how this phenomenon known as "intercultural awareness" affects Turkish secondary school pupils. However, it is important that secondary school covers all levels to ensure generalizability in terms of diversity and findings.

#### **Materials (Data Collection Tools)**

It is a 3-point Likert-type rating scale developed by the researchers.

#### **Data Collection Procedures**

##### ***Scale Development Process***

During the first phase of the scale's development, relevant literature was reviewed in an effort to identify the dimensions under which the behaviors that students were expected to exhibit in relation to interculturality and intercultural awareness would be gathered. After a review of both national and international research, it was determined that the scale should comprise three fundamental elements to assess people's intercultural awareness. Three subscales make up the "intercultural awareness scale" that was developed as part of the study. They are behavioral, emotive, and cognitive. Intercultural awareness criteria were a major factor in determining these three subscales (Chen & Starosta, 1998; Kartarı, 2001; Spitzberg & Changnon, 2009; Rozaimie et al., 2011; Perry & Southwell, 2011; Walton, Priest, & Paradies, 2013; Karabuğa Yakar & Ecevit Alpar, 2017; Denson et al., 2017; Burak et al., 2020). When composing the items, subject matter experts and the intended audience for the scale can also be consulted in addition to the literature research (Tekin, 2000; Gültekin, 2017). In this direction, a two-question form that covered the advantages and disadvantages of intercultural awareness for students studying in a multicultural classroom was applied to create an item pool for the scale. This pool was then developed using data gathered from interculturalism literature and field experts. Demographic factors that are assumed to influence people's level of intercultural awareness were also included in the study, such as gender and grade level. When writing the items, approximately three times the number of items designed to be used in the scale should be written. Because there may be items that do not serve the purpose and can be removed from the scale (Tezbaşaran, 2008; Baykul, 2010). Based on this view, a 15-item scale was targeted since the candidate scale would be applied to 5th, 6th, 7th and 8th grades of secondary school. Thus, a question pool of 45 items was formed for cognitive, affective and behavioral dimensions. The pool included 12 items in the cognitive dimension, 18 items in the affective dimension and 15 items in the behavioral dimension. In order for the items to reflect the relevant dimension in the best way, necessary arrangements were made for each dimension by considering their proportional weights.

Expert comment was sought on the 45-item experimental form in the second phase. The purpose of the 'Expert Evaluation Form' is to assess each item's appropriateness for the following circumstances. These are the following:

1. Does everyone interpret the article in the same way?
2. Are there compounds that are similar?
3. Should certain statements be divided into two distinct clauses?
4. Do the items depict scenarios that students might present?

In this study, Davis (1992) technique, which is one of the Content Validity Index techniques, was used. In this technique, expert opinions are graded as A. The item represents the trait, B. The item needs some correction, C. The item needs a lot of correction, D. The item does not represent the trait. To acquire the CGIs for the candidate item in the scale, divide the entire number of A's and B's in all expert forms by the total number of experts. The item's content validity is sufficient if the CGI index is higher than 0.80. Low CGI items are removed (Davis, 1992). It is advised to use this strategy with a minimum of three professionals and a maximum of twenty. Eight experts in total were consulted as part of the study's scope: three linguists, three field experts, one measurement expert, and one Psychological counselling and guidance (PCG) specialist (to see if the items to be implemented at the secondary school level would cause different tendencies). The opinions of field specialists were obtained for this study by assigning a category to each item, such as "should be removed from the scale," "item should be corrected," "item is good, can be used," or "item is very good, can be used." Nineteen of the items on the expert evaluation scale were eliminated because, based on the CQI ratio, their meanings were identical and they did not measure the relevant field. According to reports, 12 items should be utilized with corrections and 14 items should be used straight. To improve understanding of the important items, some changes were made in response to the viewpoints offered. Including the revised items, there were still 26 things. The theoretical distribution of this 26-item scale was divided into three sub-dimensions: behavioral, affective, and cognitive. Nevertheless, the measurement tool's 14 elements that were found to overlap and be in distinct dimensions were eliminated, and the analyses were redone. Following these steps, the final form of the scale had twelve elements and three sub-dimensions.

Following the review of the scale's items by two linguists and two field experts, it was determined that the format of the items should be appropriate for the group to which they are being applied (Crocker & Algina, 1986). The scale is a 3-point Likert type scale because it will be used with students in secondary school in the fifth, sixth, seventh and eighth grades. Likert-type scales with three points are thought to be an easy, trustworthy, and legitimate way to measure self-reported data. According to the measurement tool's parameters, the rating is as follows: First, strongly disagree; second, somewhat agree; and third, strongly agree. The scale yields a minimum score of 10 and a maximum score of 30. An individual's level of intercultural awareness increases with a higher score on the scale. By compiling instructions regarding the goal of the scale developed in the study and the methodology for scoring, a draft scale was produced. The draft form was distributed to 535 pupils enrolled at a secondary school in the province of Izmir's centre and area, where many cultural backgrounds coexist.

### **Data Analysis**

Data from 535 students who took part in the study were used to support reliability and validity analyses of the scale. Data from 105 students in the pilot application phase were used to determine the items' difficulty and discrimination parameters. Confirmatory factor analysis (CFA) was used in the study to provide support for the validity of the scale after exploratory factor analysis (EFA) with data from 535 students learning in a multicultural educational environment established the factor structure of the scale. It was intended to assess the model-data fit and evaluate the hypothesized correlations between variables with the aid of confirmatory factor analysis (Tabachnick & Fidell, 2001; Kline, 2010). Furthermore, each sub-dimension identified by EFA had Cronbach alpha coefficients derived for it.

### **Findings**

Within the scope of the validity study of the 'Students' Intercultural Awareness Scale in an Educational Environment with Different Cultures' developed in the study, the three factor structure that was thought to exist as a result of the relevant literature review was examined by exploratory factor analysis. Confirmatory factor analysis was applied to examine whether the measurement model defining the factor structure obtained as a result of the analysis was compatible with the data. Within the scope of the reliability study of the scale, the items were divided into two halves as single and double items with the equivalent halves method and the correlation coefficient between the equivalent halves was calculated and this value was converted into the internal consistency coefficient with the help of Spearman-Brown formula.

### **Exploratory Factor Analysis**

Factor analysis was applied to test the content validity of the 'Students' Intercultural Awareness Scale in an Educational Environment with Different Cultures' developed for secondary school students and to dimension the scale by determining the factor loadings. Kaiser-Meyer-Olkin (KMO) coefficient and Barlett Sphericity value were calculated to determine the suitability of the data for factor analysis. As a result of the analysis, KMO value was determined as 0.766 and Barlett's test results were found to be significant ( $\chi^2=469,468$ ;  $sd=66$ ,  $p=.000$ ). According to Field (2000), KMO value should be .50 and above and it cannot be factorized below this value. In addition, a KMO value between 0.70 and 0.80 indicates that the sample size is 'good' for factor analysis (Hutcheson & Sofroniou, 1999). According to these values, it was concluded that factor analysis could be performed on the 12-item scale.

In the study, firstly, principal component analysis was performed to determine whether the scale was unidimensional or not, and Varimax vertical rotation technique was used according to the principal components, considering that there was no relationship between the sub- dimensions of the scale. At this stage, overlapping items with item loadings below .30 and high factor loadings in different dimensions were identified. All of the items in the scale had factor loadings above .30, but eight items (5, 14, 21, 8, 24, 11, 19, 7) had high factor loadings in more than one dimension, so it was decided to remove them from the scale. In addition, it was decided to remove five items (22, 20, 17, 15, 12, 3) from the scale since each of them constituted a dimension alone. In order to ensure the content validity of the remaining 12 items, the item pool obtained was re-examined by field experts. The field experts stated that the removal of four items from the cognitive dimension, three items from the affective

dimension and five items from the behavioral dimension would not affect the content validity.

As a result of these processes, it was determined that the remaining 12 items in the scale were categorized under three factors. The factor loadings of the items in the scale for each factor ranged between .782 and .356. As a result of the exploratory factor analysis, the factor loading values of the 12 items and the factors formed are shown in Table 1.

**Table 1**

*Results of Factor Analysis of the Scale - Rotated Component Matrix*

Items	Statements	F1	F2	F3	
F1: Cognition	F26	I recognize speaking different languages in an educational environment with different cultures as richness.	.782		
	F9	In a multicultural educational environment, studying together with students from different cultures is diversity.	.752		
	F25	In a multicultural educational environment, I understand the different and rich perspectives that cultural differences bring to myself and other students.	.544		
	F18	In a multicultural educational environment, students are culturally similar to each other.	.442		
	F2	I know that individuals from different cultures can make friends in a multicultural educational environment.	.356		
F2: Affective	F23	I perceive coexistence in an educational environment with different cultures as socialization.		.684	
	F10	I can adapt to cultural differences in an educational environment with different cultures.		.667	
	F13	I respect cultural differences in an educational environment with different cultures.		.582	
	F4	I empathize with culturally different students in an educational environment with different cultures.		.574	
F3: Psychomotor	F6	In an educational environment with different cultures, I behave according to the characteristics of different cultures (beliefs, language, values, clothing, food and drink, games, etc.).			.659
	F16	I communicate easily with students from different cultures in an educational environment where different cultures are present.			.635
	F1	In an educational environment with different cultures, I may experience conflict with students from different cultures.			.504
		<b>Eigen value</b>	2,728	1,214	1,092
		<b>Variance Explained</b>	22,733	10,119	9,096

As can be seen in Table 1, according to the results of the exploratory factor analysis for this data set, the factor loadings of the items vary between .35 and .78, considering both the eigenvalue greater than 1 and the points starting to plateau in the slope accumulation graph. Accordingly, the items in the first dimension consist of five items with factor loadings ranging between .78 and .35. When the items in this factor are analyzed, it is named as 'cognitive dimension' since it includes statements about what they know and understand about intercultural awareness. The items in the second dimension consist of four items with factor loadings ranging between .68 and .57. When the items in this factor are



analyzed, it is named as 'affective dimension' since it includes statements about what they feel about intercultural awareness, what they value and what kind of attitudes they exhibit. The items in the third dimension consist of three items with factor loadings ranging between .65 and .50. When the items in this factor were examined, it was named as 'behavioral dimension' since it was related to what they could do, how they behaved and their performance. According to these results, it was determined that the scale consisted of three factors as cognitive, affective and behavioral, each of which explained 53.39% of the total variance, 22.733%, 10.119% and 9.096% respectively. It is desirable that the factor loadings of the scale items are 0.45 and above. This can be interpreted as that the items under the relevant factor measure the relevant structure (Büyüköztürk, 2018). According to Yong & Pearce (2013), one item in the study was .35 and one item was at the close border with .44. Considering the statement 'The generally accepted factor loading value is 0.32.', the fact that the other items are .45 and above indicates that the scaling represent the relevant factor well and the permanence is strong.

### Reliability Analysis

The intercultural awareness scale scores were tested for reliability using the test splitting method. By separating the data from an application of the scale into two equal portions and assessing the consistency between these two equal parts, the test procedure can be split. A methodology called splitting the test method was created to address the issues of discovering equivalent forms in the validity of similar forms and time constraints that arise in the test-retest method. The Spearman-Brown formula is used to obtain the dependability coefficient for the entire scale. A high level of internal consistency dependability is indicated by a Spearman-Brown value more than 0.70 (Seçer, 2015). The two-half reliability level of the scale, which falls within the acceptable level range, was determined to be 0.74 in the reliability analysis of the scale using the test-in-half approach. Various reports have indicated that acceptable internal consistency coefficients fall between 0.70 and 0.95 (Nunnally & Bernstein, 1994; Blan & Altman, 1997; DeVellis, 2003). Based on these rationales, the scale is regarded as a valid assessment instrument for identifying intercultural awareness based on the measurement outcome.

### Confirmatory Factor Analysis

In order to provide evidence for the validity of the three-factor structure determined in the study, it was decided to apply confirmatory factor analysis. In this context, the data set obtained from 535 students studying in a secondary school in Izmir province was used. Therefore, the 12-item 'Intercultural Awareness Scale of Students Studying in an Educational Environment with Different Cultures' was applied. Before the confirmatory factor analysis, it was examined whether the data set met the assumptions. Since the missing values were below 5%, which is considered critical, these values were replaced by the average method (Tabachnick & Fidel, 2007). As a result of the examination of histogram graphs, box plots and descriptive statistics, it was determined that the data met the assumptions of univariate normality and linearity. In the investigation of the multicollinearity problem, it was seen that there was no multicollinearity problem since the condition index (CI) value was less than 30 and the variance increase factor (VIF) values were less than 10 (Hair, Anderson, Tatham, & Black, 1998). The goodness-of-fit results of the measurement model obtained in order to determine whether the structure revealed by EFA is validated with the data obtained within the scope of the study are shown in Table 2.

**Table 2**

*Measurement Model Fit Indices and Reference Intervals*

Indexes	Perfect Fit	Acceptable Fit	Results
$\chi^2/Sd$	$0 \leq \chi^2/Sd < 2$	$2 < \chi^2/Sd \leq 5$	2.61
RMSEA	$0 \leq RMSEA \leq .08$	$.08 < RMSEA \leq 1.00$	.055
CFI	$.95 \leq CFI \leq 1.0$	$.90 \leq CFI < .95$	.93
NFI	$.95 \leq NFI \leq 1.00$	$.90 \leq NFI \leq .95$	.89

NNFI (TLI)	$.95 \leq \text{NNFI (TLI)} \leq 1.00$	$.90 \leq \text{NNFI (TLI)} \leq .95$	.91
RMR	$0 \leq \text{RMR} \leq .08$	$.08 < \text{RMR} \leq 1.00$	0.048

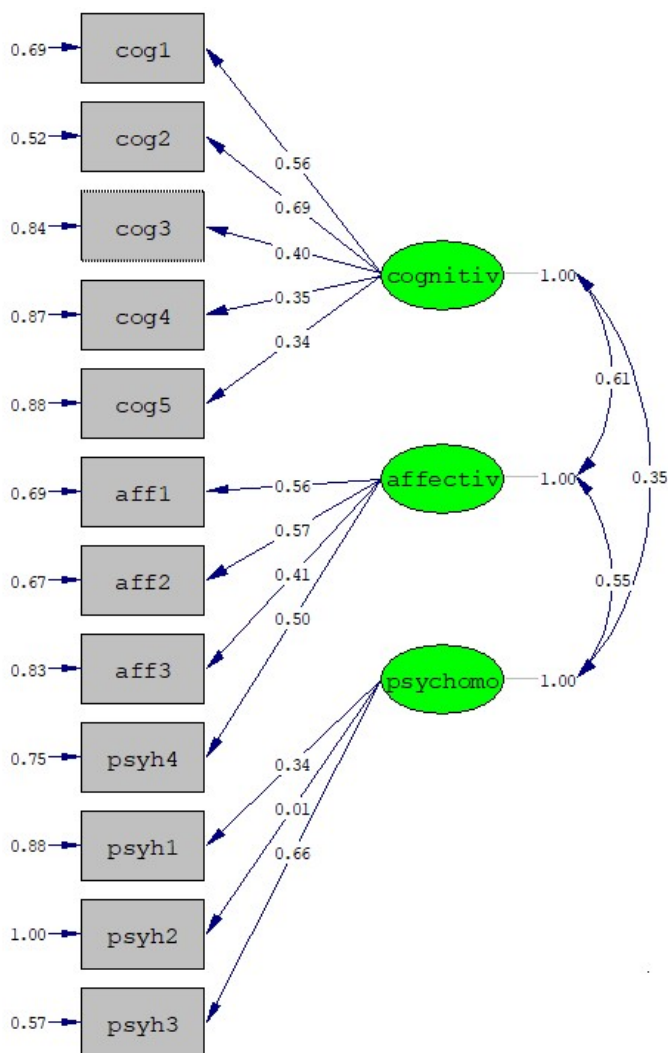
(Şimşek, 2007; Çokluk, Şekercioğlu, & Büyüköztürk, 2018; Aksu, Eser, & Güzeller, 2017; Bentler & Bonett, 1980).

As a result of the CFA presented in Table 2, the fit values were discussed in order to decide on the verifiability of the model. In the model  $\chi^2=127.94$  and  $SD=49$  and  $\chi^2/Sd=2.61$ , which is an acceptable fit; RMSEA (Root Mean Square Error of Approximation) value is 0.55, which is an excellent fit. In addition, CFI fit value (.93) was found to be an acceptable fit; NFI fit value (.89) was close to the critical value; NNFI fit value (.91) was found to be an acceptable fit; RMR fit value (.05) was found to be at the level of perfect fit. After a comprehensive analysis of the data, it was determined that the model developed using the three-dimensional structure of the scale's items was suitable and that the values obtained for the measurement tool used in the study were within an acceptable range based on the fit indices (Kline, 2005; Bentler, 1990). In other words, it was determined that the results obtained from the 'Students' Intercultural Awareness Scale in an Educational Environment with Different Cultures' were valid. The factorial model of the scale and factor loading values for the factor-item relationship are given in Figure 1.

**Figure 1.**

*CFA Results for the Intercultural Awareness Scale of Students Studying in an Educational Environment with Different Cultures (Standardized Values)*





When Figure 1 was examined, it was determined that the scale aiming to determine students' intercultural awareness had a structure consisting of 12 items and three factors named as cognition, affective and behavioral.

### Discussion, Conclusion, and Recommendations

In this study, which was carried out to improve the intercultural awareness of secondary school students studying in an educational environment with different cultures, an item pool of 45 items was first created and the items were rearranged after the expert opinion. As a result of the exploratory factor analysis of the scale, which was basically thought to have a three-factor structure, it was determined that it had a three-factor structure and consisted of 12 items. In the study, the determined factor structure of the scale was supported by confirmatory factor analysis and evidence for the validity of the scale was presented. In the test split analysis obtained for the reliability of the scale, the two-half reliability level of the scale was calculated as 0.74. These results show that the reliability of the study is at an acceptable level. The results of confirmatory factor analyses  $\chi^2$  value was calculated as 127.94, sd was calculated as 49 and  $\chi^2/sd=2.61$  value was reached. It was found that RMSEA value was .055, NFI value was .89, NNFI value was .91, CFI value was .93 and RMR value was .048.

When the literature was examined, it was found that there are a limited number of scales with different conceptual expressions related to intercultural awareness in Turkey. The 'Intercultural Awareness Scale' developed by Rozaimie et al. (2011) was adapted into Turkish by Yakar and Alpar (2017). The original scale (cultural awareness dimension, perceived cultural awareness dimension, cultural communication

awareness dimension) is similar to our study in terms of its three-factor structure and statistical results. Similarly, the 'Multicultural Competence Perceptions Scale' developed by Başbay and Kağnıcı (2011) for teachers is a three-dimensional scale consisting of 'awareness', 'knowledge' and 'skill'. Although it is expressed with different concepts in terms of factor dimensioning, it is seen that it is similar to our study in terms of the study group. In addition, the 'Intercultural Competence Scale' developed by Chao (2014) was adapted into Turkish by Sarı and Özdil (2022). Although the scale is similar to our scale in terms of content, it differs from our study in that it consists of five dimensions and the sample group is undergraduate students. The fact that it consists of five dimensions is thought to be due to different conceptualizations in the literature and the level of the study group.

In scientific terms, it can be said that this is the first scale (taking into account the Turkish culture/norm) created to measure the intercultural awareness of students aged 11-14 years who study in an educational environment with different cultures. The study is of great importance in this respect. The developed scale is important in terms of informing the researchers about the advantages and disadvantages of intercultural awareness and revealing the reasons, especially since many different cultures come together with the increasing migration circulation since 2011 and the density of children at the age of education. This importance is based on the fact that multicultural education includes all cultural diversity and that education covers these cultural differences (Gezer & Şahin, 2017). According to Ergun (2000), the continuity of the social relationship that people establish with other people is the necessity of living together. Regardless of the differences within this coexistence, it is important that everyone has the right to education in order to develop and realize themselves. For this, the fact that each individual receives a better and more qualified education together with their peers in schools with multiculturalism will enable them to develop both personal and general awareness of diversity (Bozkaya, 2020). In this context, it is thought that the scale can be used as a valid and reliable measurement tool, especially in educational environments, and as a result, the measurement results can be used as a valid and reliable measurement tool in order to determine the level of intercultural awareness and to organize and design learning environments. The fact that the scale, which was developed to determine the opinions of students in an educational environment where many cultures coexist, especially in a school environment, was obtained with the methods that were meticulously followed in the scale development process is the factor that increases the validity and reliability of the results. However, since the attitudes and behaviors of individuals may change over time, it should always be taken into consideration that the measurement results of all developed scales may not exhibit a valid and reliable structure for a very long time. The sample in this study was composed of secondary school students and therefore the validity and reliability of the measurement results of the 'Intercultural Awareness Scale of Students Receiving Education in an Educational Environment with Different Cultures' was limited to the sample of the study. This limitation may not meet the desired results in different age groups and regions. For this reason, it is recommended that validity and reliability studies be carried out for different measurement results by using different methodologies such as mixed research methods that address both qualitative and quantitative methods by creating samples consisting of different regions and different age groups for future research. The development of intercultural awareness trainings for educational practices can be emphasized. In order to facilitate the adaptation of children from different cultures to the school climate, social and cultural activities can be carried out to reduce the prejudices of other students and parents in the school. Intercultural intervention and orientation curriculum for teachers and administrators can be organized through pre-service and in-service training curriculum. Integrating the history, traditions, arts and values of different cultures into curricula can improve intercultural communication and cooperation between school management and partners.

### **Research and Publication Ethics**

In this study, all rules specified in the "Directive on Scientific Research and Publication Ethics of Higher Education Institutions" were followed. None of the actions specified under the second section of the Directive, "Actions Contrary to Scientific Research and Publication Ethics", have been carried out.

### Disclosure Statements

1. Contribution rate statement of researchers: First Author 50%, Second Author 50%
2. No potential conflict of interest was reported by the author.

### CRedit authorship contribution statement

Ceren KARAKOÇ: Writing – review & editing, data collection, data analysis, Methodology, Conceptualization

Gökhan AKSU: Writing – review & editing, data collection, data analysis, Methodology, Conceptualization

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**ANNEX 1**

**STUDENTS' INTERCULTURAL AWARENESS SCALE IN AN EDUCATIONAL ENVIRONMENT WITH DIFFERENT CULTURES**

Dear Students

This form was prepared by the researcher to measure your views on cultural differences (language, religion, ethnicity, food and drink, music, games, clothing, etc.) in a school where different cultures (Turkish, Kurdish, Arab, Roma, etc.) coexist. Please fill in the class level and gender fields and tick the items according to their suitability.

**Note:** The scoring in the form is as follows; **'1- Strongly Disagree', '2- Somewhat Agree', '3- Strongly Agree'**. Tick all items. You can tick only one of the three options presented in each item. Thank you.

**Class Level:** ..... **Gender:**.....

<b>MADDELER</b>	<b>1-Strongly Disagree</b>	<b>2-Slightly Agree</b>	<b>3-Strongly Agree</b>
1. I recognize speaking different languages in an educational environment with different cultures as a richness.			
2. In an educational environment with different cultures, receiving education with students from different cultures is diversity.			
3. In an educational environment with different cultures, I understand the different and rich perspectives that cultural differences bring to myself and other students.			
4. In a multicultural educational environment, students are culturally similar to each other.			
5. I know that individuals from different cultures can make friends in an educational environment with different cultures.			
6. I perceive coexistence in an educational environment with different cultures as socialization.			
7. I can adapt to cultural differences in an educational environment with different cultures.			
8. I respect cultural differences in an educational environment with different cultures.			
9. I empathize with culturally different students in an educational environment with different cultures.			
10. In an educational environment where there are different cultures, I behave according to the characteristics of different cultures (beliefs, language, values, clothing, eating and drinking, games, etc.).			
11. In an educational environment where different cultures are present, I communicate easily with students from different cultures.			
12. I can experience conflict with students from different cultures in an educational environment where there are different cultures.			



## Evaluation of Uncertainty Experienced in Schools Within the Context of School Objectives<sup>1</sup>

Emine Doğan<sup>2</sup> and Ruhi Sarpkaya<sup>3</sup>

### Abstract

This study examines the uncertainties encountered in schools within the framework of school objectives, focusing on their implications for educational processes. Acknowledging that uncertainty is a pervasive phenomenon in schools, the research explores how school objectives can both mitigate and clarify these ambiguities. Using a qualitative research design, data were gathered from school administrators and teachers in primary and secondary schools located in the Efeler district of Adın province. Semi-structured interviews provided in-depth insights, which were subsequently analyzed using content analysis. The findings reveal that uncertainties often disrupt motivation, performance, and the overall functioning of educational institutions. Recommendations for effectively addressing these challenges were proposed, emphasizing proactive strategies for uncertainty management.

This study contributes to literature by highlighting the interplay between school objectives and uncertainty, offering a practical framework for improving educational practices in uncertain conditions. It addresses a critical gap by identifying actionable strategies for educational stakeholders, ensuring resilience and adaptability in the face of uncertainties.

**Keywords:** Uncertainty, School objectives, educational processes, stakeholder strategies, resilience in schools.

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## Introduction

Indecision is occasionally observed in individuals, society, organizations, and even nature itself. Every situation where indecision is observed carries an inherent uncertainty. In general terms, uncertainty refers to ambiguity, unpredictability, the unknown, or the unclear, and encompasses conditions that are variable and contradictory depending on circumstances. On the other hand, in today's world of constant data flow, it can be said change has become the 'normal' state. Individuals, organizations, and even societies can maintain their existence as long as they adapt to change and keep pace with its speed. In this context, uncertainty in schools is accepted as an indispensable part of the educational process.

Studies on the role and effects of uncertainty show it has significant impacts on students, teachers, and school administrators. How uncertainty acts as a catalyst, especially in creativity and learning processes, reveals why managing uncertainties in education is so critical (Beghetto & Jaeger, 2022). It is stated

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that uncertainty in education helps students develop problem-solving and critical thinking skills, while also providing opportunities for teachers to renew their pedagogical approaches (Vavrus, 2021). However, if these uncertainties are not managed, serious disruptions and motivational losses can be experienced in educational processes (Schuck et al., 2018). Therefore, effective handling of uncertainties in educational management plays a critical role in improving the performance of both students and teachers and the overall quality of education (Ng, 2013).

While existing studies provide valuable insights into the general impact of uncertainty, there is a gap in exploring how school objectives can serve as both a framework for mitigating uncertainty and a driver for achieving stability in uncertain contexts. This study seeks to address this gap by examining the relationship between school objectives and uncertainty, contributing to a more nuanced understanding of how uncertainties can be effectively managed in educational settings.

The theoretical significance of this study lies in its attempt to integrate uncertainty management theories with the practical realities of educational administration, thereby providing a robust conceptual framework. Practically, it offers evidence-based strategies for school leaders and policymakers, emphasizing proactive measures that align with school objectives to manage uncertainties effectively. By bridging this gap, the study enhances our understanding of uncertainty within the context of school objectives and contributes actionable insights to both the academic literature and practical applications.

This article aims to examine how uncertainties in schools can be evaluated in the context of school goals and their effects on educational processes, thereby contributing to the literature by highlighting new perspectives on managing uncertainty in education. By addressing the interplay between uncertainty and school objectives, this study provides an original framework that not only fills a critical gap in existing research but also offers innovative strategies for practical application in educational management.

## **Literature Review**

### ***The Concept of Uncertainty and Uncertainty in Schools***

Uncertainty is generally defined in various ways. Berger and Calabrese (1975) define uncertainty as the number of alternative predictions a person has in predicting the future behaviors of others or explaining past behaviors. Bradac (2001) considers uncertainty as the unpredictability of an environment or a task. Lamnina and Chase (2019) define uncertainty as a subjective experience of an individual doubting, being unsure, or wondering about how the future will shape, what the present means, or how to interpret the past. Gard and Wright (2001) address uncertainty as the inability to predict the outcome of events in the environment. These definitions show uncertainty is associated with unpredictability, complexity, and lack of information.

Uncertainties in schools are generally related to external factors such as sudden changes in education policies, economic conditions, and social dynamics. These uncertainties can negatively affect the motivation and performance of students and teachers (Vavrus, 2021). Kraft et al. (2015) define uncertainty in school as a continuous situation arising from the diversity of students and the academic and social needs they bring. Hameiri et al. (2014) consider uncertainty in school as the situation where school principals and teachers cannot predict the consequences of decisions and the effects of events. Munthe (2001) associates uncertainties in teaching with the absence of concrete models to imitate, ambiguity of effect lines, multiple and controversial criteria, uncertainty in evaluation timing, and indecision in the product. These definitions show uncertainty in schools has a multidimensional and complex structure, stemming from variability in student needs, decision-making processes, and teaching practices.

### ***Uncertainty from a Theoretical Perspective***

School administrators, teachers and students are faced with various uncertainties and managing these uncertainties effectively is critical to the success of educational processes. The following uncertainty theories offer important insights into understanding and managing these uncertainties. This theoretical

framework emphasizes uncertainty is not only a situation which needs to be reduced but also a complex phenomenon which needs to be managed and sometimes sustained.

### ***Uncertainty Reduction Theory***

Uncertainty Reduction Theory, developed by Berger and Calabrese (1975), suggests individuals have a natural tendency to reduce uncertainty. This theory argues that especially in initial interactions, people try to reduce uncertainty by trying to obtain information about each other. Accordingly, as uncertainty increases, the amount of communication also increases, and as uncertainty decreases, communication becomes more intimate and open. This theory is especially used in communication and decision-making processes. In schools, when teachers and administrators encounter uncertainty, they try to reduce this uncertainty through gathering and analyzing information. For example, pilot applications can be made to reduce uncertainty about the results of a new educational program, and decisions can be made by analyzing the data obtained in this process. However, such efforts often assume that sufficient resources, expertise, and time are readily available, which may not always be the case in under-resourced schools. Furthermore, the focus on reducing uncertainty might inadvertently discourage adaptive thinking or innovative problem-solving, which can be critical in dynamic and unpredictable educational environments.

### ***Problematic Integration Theory***

Babrow's (1992) Problematic Integration Theory addresses the conflicts individuals experience between various expectations and perceptions and suggests uncertainty is not only a situation which needs to be reduced, but also includes the complex relationship between probability assessments and the evaluation of the objects of these assessments. This theory emphasizes the multidimensional and dynamic nature of uncertainty and argues uncertainty may not always be negative. In schools, teachers and students may have various expectations and perceptions about the outcomes of educational policies and practices. Conflicts between these expectations and perceptions can increase the sense of uncertainty. For example, differing views among teachers on whether educational reforms will be successful can create uncertainty in schools. However, the theory offers limited practical strategies for resolving these conflicts, which can exacerbate divisions among stakeholders. Additionally, it does not fully address how these uncertainties might be leveraged as opportunities for constructive dialogue and innovation.

### ***Uncertainty Management Theory***

Brashers' (2001) Uncertainty Management Theory suggests individuals not only try to reduce uncertainty but may sometimes try to increase or maintain it. This theory emphasizes the complex nature of uncertainty, and the various strategies individuals use to cope with uncertainty. The theory, which has important applications especially in the field of health communication, also states uncertainty can sometimes be a source of hope and optimism. In school context, teachers and administrators can create flexible plans and alternative scenarios to cope with uncertainty. For example, emergency plans that will come into play in cases of unexpected events are among these strategies. However, the theory's broad focus on uncertainty management lacks specific guidance for prioritizing strategies in resource-constrained educational settings. Furthermore, it does not sufficiently address the potential risks of maintaining uncertainty, which may lead to prolonged inaction or stakeholder confusion in critical decision-making processes.

### ***Risk Society and Uncertainty***

Beck's (1992) concept of Risk Society emphasizes the increasing role of uncertainty in modern societies. This approach suggests technological and scientific advances create new risks and uncertainties, and it affects social structures. In educational contexts, this approach can be used to understand the uncertainties in the process of schools adapting to changing social conditions (Gard & Wright, 2001). In the school environment, the adaptation of technology to education and the effects of global education policies can bring uncertainties and risks. Teachers and administrators should focus on continuous learning and adaptation to new situations to manage these uncertainties and risks.

When the issue of uncertainty in schools is evaluated, it appears as a complex and multidimensional phenomenon. Educational institutions operate under constantly changing social, technological, and political conditions, and this may lead to uncertainties. Schools need to learn to manage these uncertainties effectively rather than trying to reduce them while realizing their goals. In this context, an approach considering the potential positive aspects of uncertainty and developing various management strategies can increase schools' capacity to adapt to changing conditions and provide effective education. However, the emphasis on adaptation and management often overlooks the unequal access to resources and technology among schools, which can exacerbate existing inequalities. Furthermore, the approach does not adequately consider how systemic and institutional constraints may limit the ability of schools to adapt, particularly in underprivileged or resource-scarce settings.

### ***Types of Uncertainty***

There are different types of uncertainty that express unpredictable situations and results, and each emerges in a different context. Milliken (1987) defines uncertainty as the inability of individuals to accurately predict future events and there are three types of uncertainty: state uncertainty, effect uncertainty, and response uncertainty. State uncertainty is the inability to predict how environmental factors will change; effect uncertainty is the inability to predict the impact of an event on the organization; and response uncertainty is the inability to know the consequences of the organization's response options to current conditions. School administrators can develop appropriate strategies and minimize the negative effects of uncertainty by identifying these types of uncertainty.

Another classification was made by Courtney et al. (1997), and accordingly, there are four types of uncertainty: clear uncertainties, alternative uncertainties, range uncertainties, and complete uncertainty. Clear uncertainties are situations where future outcomes are known but probabilities are unknown. Alternative uncertainties are situations where outcomes are certain, but probabilities are uncertain. Range uncertainties are situations where the outcome range is known but the probability of a specific outcome is unknown. Complete uncertainty is where neither outcomes nor probabilities are known.

This classification of uncertainty types provides a foundational framework for aligning uncertainty management strategies with school objectives, thereby directly contributing to the study's aim of exploring how uncertainties impact educational processes and identifying effective methods to address these challenges within the context of organizational goals.

### ***Causes of Uncertainty***

Uncertainty can arise from various sources in educational processes and can have significant effects on school management, teachers, and students. Economic and political factors are among the main causes of uncertainties in education. In Tanzania's education system, economic inequalities, policy changes, and inadequate educational infrastructure lead to uncertainties. Sudden policy changes can make it difficult for students and teachers to adapt to these changes and negatively affect the educational process (Vavrus, 2021, pp. 8-9). Technological changes are also important sources of uncertainties in education. While the integration of technology into education creates opportunities, it also causes uncertainties. The rapid incorporation of technological innovations into educational processes requires teachers to adapt to these innovations, which can create uncertainty and stress among teachers (Schuck et al., 2018).

Social and cultural dynamics are among other causes of uncertainties. The effects of globalization on education erode traditional systems of meaning and method, leading to uncertainties. Social factors such as gender roles and family structures affect the uncertainties students face in their educational processes (Carney & Madsen, 2021). Structural problems of the education system are also an important source of uncertainties. In Singapore, the uncertainties faced by school leaders are associated with factors such as the rapidly developing knowledge economy, technological advances, and increasing complexity of ways of doing business. These structural problems complicate the decision-making processes of school leaders and teachers, increasing uncertainties (Ng, 2013). Performance evaluation systems are another cause of uncertainties. The reliance on qualitative judgments in technologies used

to evaluate teachers' performances leads them to constantly question their performance. This situation can negatively affect teachers' job satisfaction and motivation (Englund & Frostenson, 2017).

Moles (2018), on the other hand, classified the three main causes of uncertainty as innovation, complexity, and insolubility. While innovation refers to the difficulties and variability in defining concepts; complexity encompasses situations where experimentation and observation are not possible. Insolubility emphasizes the inherent uncertainty of certain phenomena. In educational organizations, the integration of technological innovations into the curriculum, the abstraction of educational objectives and the ambiguous nature of the concept of management can be given as examples of these reasons. To cope with uncertainty, it is important to conceptualize facts according to consistent laws of thought and reason, rather than confining them within strict limits.

### ***Consequences of Uncertainty***

The consequences of uncertainty in schools have profound effects on all components of the educational process. Uncertainty can affect students' motivation, teachers' performance, and the overall functioning of schools. Beghetto and Jaeger (2022) address uncertainty can stimulate creative thought processes and function as an important catalyst in education, but at the same time, an appropriate amount of uncertainty is needed to support motivation and curiosity, and excessive uncertainty can negatively affect learning processes and increase stress levels.

Vavrus (2021) states uncertainty in education is often confused with danger, risk, and misfortune, and this new approach suggests uncertainty can play a productive role in thinking about the future. He emphasizes sudden changes in education policies and inadequate planning increase uncertainties. Ng (2013) discusses the methods of school leaders in coping with uncertainties. Factors such as the rapidly changing knowledge economy, technological advances, and the complexity of ways of doing business were among the main causes of uncertainties, and it was stated school leaders need skills such as foreseeing the future, understanding the context, adapting, and collaborating to cope with uncertainties.

Herzig and Jimmieson (2006) stated uncertainty is an important source of stress for managers in organizational change processes, but it can sometimes be preferable since it offers hope for a positive outcome. Uncertainty management theory argues that not every uncertainty is negative and that sometimes increasing uncertainty can be more beneficial (Herzig & Jimmieson, 2006; Karagül, 2011; Sarı & Dağ, 2009).

The consequences of uncertainty are complex and multidimensional. While functioning as a catalyst that stimulates creative thinking and problem-solving skills on the one hand, excessive uncertainty can cause stress and loss of motivation on the other. The consistency and predictability of education policies are critical to reducing the negative effects of uncertainty. School leaders and teachers can create more positive educational environments by developing strategies to cope with uncertainty. One key strategy for achieving long-term success in education is to manage uncertainty and use it as an opportunity for learning and growth. The findings on the consequences of uncertainty can guide school leaders and policymakers in designing strategies that balance the positive and negative aspects of uncertainty. By fostering a stable yet adaptable environment, schools can use uncertainty as a catalyst for innovation and growth while implementing consistent policies and proactive planning to mitigate its adverse effects on stakeholders' motivation and performance.

### ***School Objectives and Uncertainty***

Providing equal opportunities in education, supporting individuals to use their abilities at the highest level, and instilling democratic values can be counted among the objectives of the school (Sergiovanni, 2009). Cunningham and Cordeiro (2013) argue that schools should develop various strategies to maximize students' individual potential. These strategies include developing students' critical thinking skills, imparting social skills, and instilling moral values. Additionally, according to Banks (2015), schools have social responsibilities such as ensuring social equality and increasing equal opportunities. Darling-Hammond et al. (2020) emphasize modern schools aim to raise versatile individuals equipped with the necessary 21st century skills.



The structure and objectives of the school as an educational organization can be more successfully realized through effective management of uncertainties. The flexibility of the school's organizational structure, rapid adaptation to uncertainties, and cooperation among stakeholders are the key elements of this process (Hoy & Miskel, 2013; Sergiovanni, 2009). One of the basic objectives of schools is to prepare students for future uncertain conditions. Fullan (2020) proposes the concept of "change agility" in this context. Schools should not only transfer knowledge to students but also equip them with skills to cope with uncertainty. This involves developing critical thinking, problem-solving, and adaptation abilities.

Schools are environments where uncertainty is prevalent. Uncertainties encountered in schools can stem from factors such as changes in education policies, student behaviors, teacher performance, budget constraints, and technological developments. These uncertainties complicate the decision-making processes of school administrators and may hinder schools from achieving goals. School leaders should be flexible and adaptable to cope with uncertainty. They should use strategies such as data collection, analysis, and communication with stakeholders to reduce uncertainty (Helsing, 2007). In conclusion, uncertainty is an integral part of schools and can appear in different types. School leaders should adopt a proactive and flexible approach to overcome uncertainty and achieve school goals. Managing uncertainty is a critical skill for effective school management and requires continuous learning and adaptation.

The identification and management of uncertainties are critical for the effectiveness and sustainability of educational organizations. How school administrators and teachers perceive uncertainties and how they cope with these situations are factors that directly affect the success of educational processes. Studies on how uncertainties in education are evaluated within the framework of school objectives will make significant contributions in this field. In accordance with scientific research methods and principles, the study examines how uncertainties experienced in schools are evaluated by administrators and teachers. The problem statement and sub-problems of the research are as follows:

"How do administrators and teachers evaluate the uncertainties experienced in schools in terms of school objectives?" In this context, answers to the following sub-problems were sought:

1. How do school administrators and teachers define the uncertainties experienced in their schools?
2. What are the factors causing uncertainty in school?
3. How do uncertainties affect the educational organization?
4. What do school administrators and teachers do to cope with uncertainty in their schools?
5. According to school administrators and teachers, what should be done in schools to prevent or manage uncertainty in the context of school objectives?

## Method

### Research Model

This research was conducted using qualitative research methods to evaluate the uncertainties experienced in schools within the context of school objectives. Qualitative research aims to examine a phenomenon in depth and understand participants' perspectives (Creswell, 2019). In this context, a phenomenological design was preferred. Phenomenological studies are an approach aiming to examine participants' experiences and perceptions in depth (Büyüköztürk et al., 2007; Ersoy, 2019). This approach was deemed appropriate to understand the views of school administrators and teachers on uncertainties experienced in schools.

### **Study Group**

The research was conducted with administrators and teachers working in public primary and secondary schools in the Efeler district of Aydin province during the 2022-2023 academic year. The criterion sampling technique was used to determine the participants. Accordingly, administrators and teachers with more than five years of professional experience involved in the study. Additionally, efforts were made to ensure maximum diversity by selecting teachers and administrators from different school levels (primary, middle, high school) and with various genders, branches, and seniority. As a result, six administrators and twelve teachers participated.

### **Data Collection Tools**

Data were collected through a semi-structured interview form developed by the researcher and created after obtaining expert opinion. The interview form consists of five basic questions and sub-questions supporting these questions, aiming to understand in depth the experiences and perceptions of participants regarding uncertainties experienced in schools. Prior to its implementation, the tool underwent a piloting phase with a small group of teachers and administrators, allowing for adjustments to improve question clarity and alignment with the research focus. The interviews lasted between 25-40 minutes and were audio-recorded with the participants' permission.

### **Data Collection Process and Analysis**

The obtained data were analyzed through content analysis. The MAXQDA 2020 qualitative data analysis program was used. The analysis included the following stages: (1) importing and organizing the raw data into MAXQDA for systematic analysis, (2) initial coding of data segments using in-vivo and open coding methods to ensure that key themes emerged directly from participants' responses, (3) creation of themes by grouping related codes into broader categories, (4) arrangement of codes and themes into hierarchical structures to clarify relationships between them, and (5) definition and interpretation of findings in relation to the research questions. The coding process was conducted separately by the researcher and the advisor, and discrepancies in coding were discussed and reconciled through iterative consultations to ensure consistency and reliability. This comprehensive approach allowed for a nuanced understanding of the data while maintaining methodological rigor.

### **Researcher's Role**

The researcher took an active role in the data collection and analysis process. The researcher, who conducted the interviews, decoded and analyzed the data, adhered to the principles of objectivity and meticulousness throughout the process.

### **Validity, Reliability, and Ethical Considerations**

Various strategies were used to increase the validity and reliability. Participant confirmation and long-term interaction were provided for credibility. Detailed description was made for transferability. The data collection and analysis processes were explained in detail for consistency. Raw data and analysis notes were kept for confirmability. Necessary permissions were obtained from Aydin ADÜ Educational Research Ethics Committee (Date 22.12.2022, Number: 289137) and Aydin Provincial Directorate of National Education. Participants were informed about the purpose and content of the research, a voluntary participation form was signed, and code names were used to ensure the confidentiality.

## **Findings**

### **Findings related to the first sub-problem**

The following table provides an overview of how administrators and teachers define uncertainty and the types of uncertainties experienced in schools, categorized based on their perspectives.

When examining how school administrators and teachers define uncertainty, it was observed both groups perceive uncertainty as a negative situation. Teachers generally defined uncertainty as chaos, disorder, unknowns, lack of planning, innovations, anxiety and worry; while administrators associated it



with lawlessness, insolvability, innovations, changes, inability to foresee, risk and concern. These findings show uncertainty is generally perceived as a negative phenomenon in educational organizations, which parallels Demiral's (2014) study. Demiral stated that school administrators generally perceive uncertainty situations negatively and this leads to results such as low motivation and feelings of inadequacy.

**Table 1**

*Findings on How Administrators and Teachers Define Uncertainty*

Theme	Categories	Sub-categories	
		Teacher Views	Administrator Views
<b>Uncertainty</b>	General Definitions	Uncertainty Chaos Disorder Lack of planning/ following plans Unknowns New practices Anxiety/ Worry	Not Lawlessness Changes Inconsistency Inability to see the future Insolvability New practices
	Uncertainties Experienced in Schools	School facilities Physical conditions Social activities Assignments Special circumstances of students/parents Different attitudes of administration	of Ambiguity in legislation/regulation expressions Physical and economic conditions of the school Different ideas Incompatible working environment Extraordinary events

Administrators' association of uncertainty with risks and changes reflects their organizational-level responsibilities. This finding is consistent with Milliken's (1987) classification of types of uncertainty and the statement that managers' perception of environmental uncertainty affects organizational responses. Both groups stated that uncertainties within the school stem from various factors such as insufficient material resources, social activities, assignments, and special situations of students and parents. This result shows the sources of uncertainty in schools are multidimensional. Similarly, Mazlum's (2019) study revealed school administrators generally attribute the causes of uncertainty to factors outside their control.

The fact that both groups express the material and physical facilities of the school as uncertainty indicates that the physical conditions of schools negatively reflect on the educational environment. In addition, new practices have been expressed as uncertainty for both groups. This stems from the inadequacy of the preliminary preparation or information process regarding the changes experienced in schools. Furthermore, expressing uncertainty as inability to foresee the future and unknowns suggests that both groups have very little tolerance for uncertainty.

While administrators focus on risk and changes when defining uncertainty, indicating that they focus more on strategic and structural problems in dealing with uncertainty, teachers' emphasis on concepts such as lack of planning and chaos reflects that they focus more on daily operational challenges. This is also evidenced by the fact that administrators have expressed ambiguity in official letters and regulations. As another difference, while teachers draw attention to administrative attitudes, administrators' focus on an incompatible working environment and the presence of different ideas indicates that both groups are looking for uncertainty more on the opposite side. It can be said that the differences point to the diversity in the school's internal roles and responsibilities in strategies for dealing with uncertainty.

Teachers tend to focus on immediate, operational challenges such as planning and administrative attitudes, while administrators emphasize broader, strategic issues like risk and organizational compatibility, reflecting their respective roles in the school environment. These findings underscore the multidimensional nature of uncertainty in schools and how stakeholders' roles and responsibilities shape their perceptions, aligning with the study's aim of understanding these dynamics comprehensively.

### Findings for the second Sub-Problem

The following table summarizes the factors causing uncertainty in schools, categorized based on teacher and administrator perspectives, highlighting system-related, environmental, and organizational causes.

**Table 2**

*Findings on Factors Causing Uncertainty in Schools*

Theme	Categories	Subcategories	
		Teacher Views	Administrator Views
<b>Causes of Uncertainty</b>	System-Related Causes	Bureaucracy	Implementation of legislation and regulations Bureaucracy
		Senior managements System changes Managers' attitude	Structure and Operation of the System Lack of supervision Lack of Authority of the School Administration
	Environmental (External) Causes	Economic Conditions Political Attitudes Unusual Events	Physical and Economic Conditions Sudden Changes Closure to Change
	In-Organization Causes	Poor School Culture Irresponsibility Failing to Take the Initiative Student-Parent attitude	Reluctance Moving Away from Goals Miscommunication Neglect of duty

Administrators and teachers generally have similar descriptions; they often discuss the systemic causes of uncertainty, usually focusing on bureaucracy and the attitudes of upper management. However, teachers also view the attitudes of school administrators as a cause of uncertainty, indicating that uncertainty starts from the initial steps of management and continues from the top down.

School administrators see their limited authority as a cause of uncertainty, suggesting that upper management does not view school management as fully empowered decision-makers. Teachers'

perception of the inability to take initiative as an internal organizational cause of uncertainty also supports this view. Teachers believe that a weak organizational culture is a cause of uncertainty, indicating that they are more affected by the school climate. In contrast, administrators experience uncertainty through objectives and duty negligence, showing that administrators take a more professional and critical view of school operations and stakeholders.

Both school administrators and teachers view the external causes of uncertainty through physical and economic conditions and unusual events. The findings suggest that schools are affected by environmental issues, sudden changes, and economic conditions that negatively impact the educational environment. Communication problems are a common issue identified by both groups, who believe that lack of communication creates uncertainty in the educational environment.

The apparent misalignment between the tasks assigned to educators and the broader educational goals may contribute to a systemic disconnect, potentially increasing feelings of inefficiency and frustration among stakeholders. This disconnect suggests the possibility of a need for clearer communication and improved strategic alignment between policy-level objectives and practical implementations within schools, ensuring that educational goals are more effectively integrated into daily practices. Furthermore, the emphasis on exam statistics rather than holistic educational aims could reflect a narrow accountability framework, which might limit opportunities for fostering creativity, critical thinking, and broader learning outcomes. Addressing these potential issues could help reduce uncertainty and improve coherence in educational practices.

### Findings related to the third sub-problem

The following table outlines the effects of uncertainties experienced in schools on the educational organization, categorized based on teacher and administrator perspectives.

**Table 3**

*Findings on the Effects of Uncertainties Experienced in Schools on the Educational Organization*

	Theme	Categories	Sub-categories	
			Teacher Views	Administrator Views
<b>Effects of Uncertainties Experienced in Schools on the Educational Organization</b>	Towards school stakeholders		Lack of motivation	Reluctance
			Waste of time	Inefficient work
			Future anxiety	Disruption/postponement of work
			Unplanned work	Developing negative attitudes towards school
	Towards school climate		Creating pressure and stress	Creating pressure and stress
			Insecurity	Leading to unpredictability
			Interpersonal conflict	Negative attitude towards management
	Towards educational goals		Disrupting plans	Making effective management difficult
			Ignoring goals	Hindering achievement of goals
			Deviating from goals	Activities becoming dysfunctional

Teacher participants generally focused on the effects of uncertainty on the work environment and their own psychology, while administrators focused more on the effects on schoolwork and operations. The administrators' emphasis on inefficient work and decreased trust in the system shows that they focus more on strategic and systemic problems in dealing with uncertainty, while teachers' emphasis on anxiety and motivation concepts shows that they focus on the psychological aspect of the issue. This difference may indicate that administrators and teachers have different perspectives on approaching

problems and their solutions in the educational environment. This contrast underscores the need for targeted interventions that address both psychological and systemic aspects of uncertainty, ensuring comprehensive strategies that reflect the perspectives of all stakeholders.

In terms of school climate, teachers often described uncertainty as a source of stress and insecurity, which they perceived through their interactions and emotional responses. Administrators, however, viewed uncertainty in terms of how it affects broader relationships within the school, including the attitudes of other stakeholders toward management. This indicates that administrators may feel more accountable for school-wide outcomes and are therefore more attuned to external perceptions and systemic pressures. Both groups think that many of the tasks requested from them do not go beyond workload and remain on paper. Their statement that the basic goals of education are included in the plans, but what is expected and requested from the school at the end of the year are exam statistics reveals that the basic goals and principles are ignored in in-class and extracurricular activities in schools, and that they are moving away from school goals. This situation also reveals the relationship between the dysfunctionalities of the activities, ignoring the objectives and not achieving the objectives. This disconnect suggests a pressing need to realign accountability measures with the core educational objectives, ensuring that both in-class and extracurricular activities contribute meaningfully to broader learning outcomes. Addressing this issue may also require structural changes in policy and evaluation systems to better reflect the diverse aims of education.

**Findings related to the fourth sub-problem.**

**The following table highlights the methods employed by school administrators and teachers to cope with uncertainty in their schools, categorized by individual and organizational attitudes from both perspectives.**

**Table 4**

*Findings on How School Administrators and Teachers Cope with Uncertainty in Their Schools*

Theme	Categories	Sub-categories		
		Teacher Views	Administrator Views	
Methods of School Administrators and Teachers to Cope with Uncertainty in Their Schools	Teachers	Individual attitude	Stay calm	Taking the initiative
			To be solution-oriented	Postpone
	Administrators	Organizational attitude	Be flexible	Positive thinking
			Teamwork	Acting as a group
	Teachers	Individual attitude	Keeping communication strong	Considering other opinions
			Focusing on the problem	Being solution-oriented
	Administrators	Organizational attitude	Taking risks	Approaching with a sense of duty
			Communicate effectively	Act calmly
	Teachers	Individual attitude	Leave it to time	
			Providing an environment of trust	Keeping communication strong
	Administrators	Organizational attitude	Focus on the solution	Exchanging ideas
			Get feedback	Looking at similar apps
		Organizational attitude	Looking at past applications	

While teachers see themselves as more solution-oriented and close to a solution by staying calm, they think administrators are trying to cope with uncertainty by leaving it to time. The fact that the administrators think that they solve the problem by approaching them with a sense of duty, while the

teachers think that they postpone the problem and wait for it to be solved by others, which shows both groups see the other side as more passive from time to time.

From an organizational point of view, both parties state that teamwork, acting together and establishing strong communication solve uncertainty more easily. The fact that people act as a group in the face of uncertainty stems from the fact that they do not want to take risks individually and that they think that coping with possible negativities together will cause less stress. Even if the problem is not solved, it can be said that enduring difficult conditions together makes people feel more secure and comfortable. This observation suggests that fostering a culture of collaboration and mutual support within schools can serve as a critical buffer against the negative effects of uncertainty. Building trust among stakeholders and encouraging shared responsibility may further enhance the capacity of school communities to navigate complex and unpredictable challenges effectively.

### Findings related to the fifth sub-problem

The following table presents suggestions for preventing and managing uncertainty in schools, categorized by perspectives from teachers, administrators, and other stakeholders, focusing on the educational environment, teachers, school management, senior management (MoNE), and parents.

**Table 5**

*Findings on What Should Be Done to Prevent and Manage Uncertainty in Schools*

Theme	Categories	Sub-categories	
<b>What Needs to Be Done to Prevent and Manage Uncertainty in Schools</b>		<b>Teacher Views</b>	
		<b>Administrator Views</b>	
	Oriented to the educational environment	Strong communication Improvement of physical conditions Control	Ensuring harmony in the school climate Using effective communication skills Equal opportunity
	For teachers	Setting goals Not deviating from educational objectives	Acting in a planned manner Demonstrate determination in achieving the goals
	For school management	Getting everyone's opinion Being open to change Taking risks	Dominating the regulation Expanding jurisdiction Giving importance to cooperation
For MEB/ Senior management	Stability Seeking the opinion of subordinates	Clarifying legislation Commitment to goals Control	
For Parents	Collaborating Open communication	Ensuring belonging to the school Joint decision-making An environment of trust	

When examining the suggestions for the educational environment, it is seen that many educational institutions still do not have the desired physical facilities, and as a requirement of equal opportunity in education, the basic needs of schools should be met as a priority. Looking at the suggestions for teachers, although all educational stakeholders make all their plans in line with the basic aims and principles, they encounter situations where plans are disrupted or determination is not shown in goals during the process.

In suggestions for school management, teachers suggested that managers should have the ability to take risks and be more open to change and act decisively, while managers suggested expanding their areas of authority.

Looking at the suggestions for MoNE/other upper management, getting the opinions of lower units and making official correspondence and regulations clear are at the forefront. Since educational organizations have a hierarchical structure descending from the ministry level to schools and even classrooms, it has been addressed that the planning and instructions sent from the upper unit should be clear and precise enough for all schools to receive and implement the same message.

In suggestions for other stakeholders, especially maintaining strong communication with parents and increasing commitment to the school were emphasized. According to the participants, when there are students and parents who embrace the school and trust the school stakeholders, even if there are uncertain situations in the process, they can be overcome easily.

### **Discussion, Conclusion, And Suggestions**

**Within the scope of the *first sub-problem of the research***, it was observed that both groups perceived uncertainty as a negative situation. While teachers generally defined uncertainty as chaos, disorder, unknowns, lack of planning, innovations, anxiety, and concern; administrators associated it with concepts such as lawlessness, lack of solutions, innovations, changes, inability to foresee, risk, and concern. These findings indicate uncertainty is generally perceived as a negative phenomenon in educational organizations which parallels with Demiral's (2014) study. Demiral stated that school administrators generally perceive uncertainty situations negatively and this leads to consequences such as low motivation and feelings of inadequacy.

The fact that administrators associate uncertainty with risks and changes reflects their responsibilities at the organizational level. This finding is consistent with Milliken's (1987) classification of uncertainty types and the statement that managers' perceptions of environmental uncertainty affect organizational responses. Both groups stated that uncertainties within the school stem from various factors such as insufficient material resources, social activities, assignments, and special circumstances of students and parents. This result demonstrates the sources of uncertainty in schools are multidimensional. Similarly, Mazlum's (2019) study revealed school administrators generally attribute the causes of uncertainty to factors beyond their control.

**Findings related to the *second sub-problem of the research*** reveal three main categories of factors causing uncertainty in schools: system-related causes, internal organizational causes, and environmental (external) causes. These results demonstrate the multidimensional and complex structure of uncertainty in educational organizations. Among the system-related causes, bureaucracy, lack of supervision, sudden system changes, and administrators' attitudes stand out. These findings align with the results of Töremen's (2002) study on barriers to change in educational organizations. Töremen emphasized that unprepared and inadequately planned changes lead to uncertainty. Moreover, findings regarding the limited authority of administrators parallel the results of Turan et al.'s (2010) research on decentralization in education. This situation suggests that the centralized education system restricts decision-making processes at the school level and sets the stage for uncertainties.

Environmental (external) causes include physical and economic conditions, political attitudes, and extraordinary events. These findings coincide with Milliken's (1987) study on organizational uncertainty. Milliken stated environmental uncertainty affects organizations' decision-making processes. Particularly frequent changes in education policies and economic uncertainties make it difficult for schools to make long-term plans. At this point, stability in education policies and increasing the financial autonomy of schools may be effective in reducing uncertainties.

Findings on the inadequacy of physical and economic conditions parallel the results of Bilgin and Erbuğ's (2021) study on inequality of opportunity in education. Physical and economic differences among schools lead to inequality of opportunity in education and consequently to uncertainties. To improve



this, a fair and needs-based approach should be adopted in resource allocation to schools. In this context, the uncertainty environment created by the combination of systemic, organizational, and environmental factors significantly affects the functioning of educational organizations. Therefore, a holistic approach should be adopted to reduce and manage uncertainty, with improvements made at every stage from the system level to in-school practices. Increasing school autonomy, strengthening participatory decision-making processes, improving intra-organizational communication, and ensuring stability in education policies can be effective strategies in managing uncertainty in schools.

**Findings related to the *third sub-problem of the research*** reveal that the effects of uncertainties experienced in schools on educational organizations are observed under three main categories: effects on school stakeholders, school climate, and educational objectives. These findings demonstrate the multidimensional impact of uncertainty in educational organizations. When examining the effects on school stakeholders, it is observed that uncertainty leads to negative psychological effects such as lack of motivation, future anxiety, and insecurity. This result aligns with the findings of Sarı and Dağ (2009), which indicate that uncertainty creates negative emotions in individuals. Additionally, it has been noted uncertainty negatively affects job performance and causes time loss. This situation supports Bloom's (2007) observation that uncertainty causes work to stagnate in organizations.

In terms of school climate, it has been found that uncertainty increases interpersonal conflicts and creates pressure and stress. This result parallels the research findings of Conley and Glasman (2008), which suggest that teachers experience fear and stress in situations of uncertainty. Moreover, the finding that uncertainty leads to unpredictability and complicates management supports Milliken's (1987) view that uncertainty negatively affects organizational decision-making processes.

In the context of educational objectives, it has been determined that uncertainty disrupts plans and causes deviation from goals. This finding is consistent with İcer's (1997) and Sarpkaya's (2013) findings that uncertainties in the education system hinder the realization of educational objectives. Furthermore, findings indicating that uncertainty renders activities dysfunctional and impedes the achievement of goals demonstrate that the goal-oriented structure of educational organizations is severely affected by uncertainty. The negative effects of uncertainty, particularly in the realization of school objectives, emphasize the importance of uncertainty management in the field of educational administration.

**Findings related to the *fourth sub-problem of the research*** indicate that as a method of coping with uncertainty, teachers individually try to remain calm and composed, act flexibly, and adopt a solution-oriented approach in uncertain situations. From an organizational perspective, they emphasize acting with team spirit, establishing strong communication, and prioritizing cooperation. These results demonstrate that teachers are careful to act both with their personal attitudes and behaviors and with a collective understanding in combating uncertainty. This result is consistent with Gençoğlu's (2012) definition that teams are communities that can bring together the skills of people with different functions for difficult problems and produce creative solutions.

Administrators' evaluations of teachers' strategies for coping with uncertainty are quite striking. According to administrators, teachers take initiative in moments of uncertainty, can ignore negativities, and try to manage the situation with an optimistic perspective. Turhan (2013) states that taking initiative means, in a sense, being willing to take on the task by deriving a duty from the situation. In addition, they can be open to group dynamics and different views. These observations are important in that teachers play a proactive, constructive and conciliatory role in uncertainty management from the perspective of administrators.

On the other hand, teachers' observations about administrators' methods of coping with uncertainty are also noteworthy. According to teachers, administrators can take risks in situations of uncertainty, strive to establish effective communication, but sometimes postpone problems. At the organizational level, they try to establish trust, produce solutions through common sense, and benefit from past experiences. These findings show that from the teachers' perspective, administrators can display both decisive and constructive as well as sometimes cautious and traditional attitudes in uncertainty management. This situation is similar to Erdem's (2002) view that management in school organizations



is more inclined to apply solutions found through trial and error and experiences in the face of problems.

Finally, administrators' views on their own strategies for coping with uncertainty are quite meaningful. Administrators state that they act with a sense of duty and responsibility in combating uncertainty and try to maintain their composure. Institutionally, they state that they resort to participation, consultation, effective communication, and experience-based approaches. These results reveal that administrators evaluate their own uncertainty management styles in a more rational, systematic, and inclusive framework. According to Aydın (1994), managers aim to gain the respect of employees and increase their influence over them by including their abilities and opinions in the process, which coincides with this situation.

It is understood that teachers and administrators use a series of personal and institutional strategies to cope with uncertainty. While both stakeholder groups try to overcome uncertainty with their individual attitudes and behaviors, they also value cooperation, communication, and acting together at the organizational level. However, administrators tend to adopt a more planned, inclusive and experience-based approach, while teachers tend towards more situational, flexible and instant solutions. These differences can be evaluated as a natural reflection of the roles and responsibilities assumed by teachers and administrators. It can be said that it is critical to implement individual and organizational strategies in harmony and with mutual understanding in overcoming uncertainty in educational institutions. This situation is consistent with the expressions in Çalık's (2003) definition of organizational harmony, such as the individual's identification with the organization they work for, for example, sharing common goals and values, and being willing to make efforts on behalf of the organization.

**Findings related to the fifth sub-problem of the research** indicate that participants offered various suggestions for preventing uncertainties, addressing the educational environment, teachers, school administration, upper management, and other stakeholders. Improving the physical conditions of school environments and ensuring equal opportunities among schools were seen as critical in preventing uncertainties. It was emphasized that planned and goal-oriented work for teachers, and mastery of legislation and expansion of areas of authority for administrators, would reduce uncertainties. These findings support Holdgraf's (2014) view that the effort to cope with uncertainty is a natural action of human nature; knowing how to proceed with uncertainty empowers individuals in setting goals and making decisions.

In managing uncertainties, it is expected that upper units consider the opinions of stakeholders in the field, operate control mechanisms, and show commitment to objectives. While educational supervision is a means to make the educational process more effective, innovations implemented in the education system day by day clearly demonstrate the importance of supervision in education (Yılmaz et al., 2016). For other stakeholders, strengthening communication and cooperation, implementing joint decision-making processes, and establishing an environment of trust were important.

All these suggestions reveal the need for a holistic approach to prevent and effectively manage uncertainties. Strengthening the physical and technological infrastructure of educational institutions, developing human resources, improving legislation and administrative processes, and ensuring interaction and trust among stakeholders play a key role in coping with uncertainties. It is understood that upper policy makers and implementers need to shape their decisions and actions not in isolation from the reality of schools and stakeholders, but in line with their needs and expectations. It is thought that a flexible and decentralized management approach will be more effective in dealing with uncertainty situations.

School principals have important responsibilities in managing uncertainties. It is critical for school principals to develop their leadership skills and managerial competencies, comprehend and apply legal regulations well, and establish a positive climate and culture in their schools to cope with uncertainty situations. This view aligns with Akyol et al.'s (2017) perspective that due to the school being a living system, administrators should be open to innovations and be able to coordinate these innovations with the school, possess leadership qualities, cope with innovations and ensure their adaptation to the school

system, motivate stakeholders and ensure their sense of belonging to the school culture, and develop themselves to lead change.

However, the management of uncertainties may not be achieved solely through the efforts of upper management or school principals. Active participation and contribution of teachers, parents, and other stakeholders are also necessary. It is vital for all stakeholders to act with an understanding that prioritizes collective wisdom and cooperation for the prevention and successful management of uncertainties in schools. Kepenekçi (2004) also concluded that legal regulations such as bylaws are prepared without undergoing a serious preparation process and, more importantly, without consulting the opinions of those who will be affected by these regulations.

This study addresses a critical gap in literature by examining how uncertainties in schools are perceived and managed within the framework of school objectives, a perspective often overlooked in existing research. Previous studies, such as those by Beghetto and Jaeger (2022) and Herzig and Jimmieson (2006), have explored the general effects of uncertainty on educational stakeholders, focusing particularly on its psychological dimensions and potential as a creative catalyst. However, this research goes further by contextualizing these effects within the operational and strategic dimensions of schools, offering a novel contribution to the field. The study emphasizes the multidimensional nature of uncertainty and its interactions with systemic, organizational, and individual factors in educational settings. By providing detailed insights into teachers' and administrators' perceptions and coping strategies, it contributes to a deeper understanding of uncertainty in educational administration. Furthermore, its focus on aligning uncertainty management strategies with school objectives offers a practical framework for improving educational processes, addressing the lack of actionable solutions highlighted in previous studies.

In conclusion, the participants' suggestions for preventing and managing uncertainties require holistic and multidimensional interventions. These interventions should focus on both the structural problems of the education system and the human factor and inter-stakeholder relationships. It can be said that in managing uncertainties, flexible and participatory approaches that are sensitive to the unique needs and dynamics of schools and stakeholders are needed, rather than one-size-fits-all prescriptions valid under all conditions.

Based on the findings, the following recommendations can be developed: The opinions of educational stakeholders should be taken into account in changes in schools, and adjustments should be made in line with feedback. School administrators and teachers should be informed and prepared through in-service training before changes. Educational inequality of opportunity should be prevented; areas of authority should be made more flexible, taking into account socioeconomic and geographical conditions. School administrators should be given opportunities to exercise leadership, and their authorities should be increased. The present study can be replicated on provincial or district national education directors. Sub-themes related to uncertainty can be independent research topics. The perspectives of parents and students on uncertainty can be examined. Finally, a quantitative study can be conducted with a larger sample regarding uncertainties in schools and a scale can be developed.

### **Research and Publication Ethics**

In this study, all rules specified in the "Directive on Scientific Research and Publication Ethics of Higher Education Institutions" were followed. None of the actions specified under the second section of the Directive, "Actions Contrary to Scientific Research and Publication Ethics", have been carried out.

### **Disclosure Statements**

1. Contribution rate statement of researchers: First Author 50%, Second Author 50%
2. No potential conflict of interest was reported by the author.

### CRedit authorship contribution statement

Emine DOĞAN: Writing – review & editing, data collection, data analysis, Methodology, Conceptualization

Ruhi SARPKEYA: Writing – review & editing, data collection, data analysis, Methodology, Conceptualization

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## Effectiveness of Guided Inquiry Learning Strategies on Middle School Students' Achievement and Science Self-Efficacy

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### Abstract

The aim of this study is to investigate the effect of guided inquiry-based learning approach on students' academic achievement and science self-efficacy. In the study, a quasi-experimental model with pretest-posttest control group was used. The research was carried out with 40 students studying in a public school located in the southeast of Turkey. Within the scope of the application, while the activities in accordance with the guided inquiry-based learning approach were carried out in the experimental group, the Science Curriculum (MoE, 2018) was applied in the control group. Strength and energy achievement test and science self-efficacy scale were used as data collection tools in the study. As a result of the research, it was concluded that guided inquiry-based learning approach had a significant effect on students' academic achievement and self-efficacy. In the study, various suggestions were made for researchers.

**Keywords:** Guided inquiry-based science, self-efficacy, science education

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### Introduction

The rapid economic, social, scientific and technological developments affect the society and the individual significantly. In order to create a strong future, countries organize various educational reforms in order to adapt their education systems to this rapid change and development. The educational reforms and the constructivist teaching theory are based on. Inquiry-based learning, which is one of the teaching practices of the constructivist approach, has been tried to be prioritized as a basic approach in the science curriculum updated in 2013 (MoE, 2013). The aim of this program is to raise scientifically literate individuals. It is thought that every citizen should be educated as a science literate and science lesson is important in this process. Many methods are applied in order to raise individuals as scientifically literate. One of the most important of these methods is inquiry-based teaching method. Inquiry-based learning is handled as a process of "research and inquiry, not only as exploration and experimentation, but also as explanation and making claims" in the science curriculum from the 3rd to the 8th grade (MoE, 2013). Inquiry-based learning is a process in which students want to discover all the situations and objects around them; they make effective claims by explaining the nature and physical world around them with strong justifications; they grow up as individuals who are excited and appreciate science.

It is necessary to define inquiry and what it looks like in the classroom in order to comprehend the impact of an inquiry-based approach to instructional techniques. According to Pedaste et al. (2015), inquiry is a tactic that enables students to act like scientists in the field by adopting the same

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procedures and methods that scientists use to create knowledge. In essence, students are using problem-solving to increase their knowledge. They can test them out in the lab and come up with queries concerning phenomena. In short, it is a learning approach in which the student is at the center and she/he creates the knowledge in her/his own mind by doing-living-thinking like a scientist (MoE, 2013). Inquiry and the National Science Education Standards (National Research Council [NRC], 2000) define inquiry as a process. In the literature, it has been stated that since inquiry is used both as a teaching method and in the sense of doing science, it causes confusion in the definition of inquiry. Inquiry-based science teaching includes defining scientific inquiry problems, testing hypotheses, solving problems, conducting scientific research, and sharing scientific evidence (NRC, 2000). Inquiry-based science teaching is the increase in students' ability to understand the nature of science and to do science by asking questions (inquiry), planning, designing, using data, researching, analyzing and communicating. Inquiry-based learning is viewed as a learning process by which students ask questions, research, and analyze data. Research inquiry approach has the potential of learning by doing science, learning science and learning how to do science (NRC, 2000). In the American National Science Education Standards determined by the National Research Council (NRC), the research-based learning approach is defined as follows: It is a multidimensional process in which observations are made by students, questions are asked, existing information about the subject is searched from books and other sources, research is planned, information is compared with experimental findings, tools and materials are used to collect; analyzing and interpreting information, assumptions, explanations and results are put forward and discussed. (NRC, 2000). By distinguishing between various inquiry styles, Wang et al. (2022) expand on the definition of inquiry-based learning. Both organized and open-ended questions can be presented to pupils by teachers. According to Nicol (2021), open inquiry is when pupils conduct research through unguided exploration. Guided inquiry, sometimes referred to as structured inquiry, gives students the freedom to investigate and engage in critical thinking while offering the teacher as much assistance as the students require (Nicol, 2021). Inquiry-based method critics usually focus on the learner's prior knowledge; without this foundation, students may find it difficult to comprehend the tasks they are given (Kirschner et al., 2006; Mayer, 2004). According to Spaulding (2001), there are three types of inquiry-based learning: structured inquiry, guided inquiry and open inquiry. Structured inquiry consists of students' reactions to what the teacher tells. In this approach, since the problems to be solved by the students, the solution method and the necessary materials are provided by the teacher, the students are only expected to find the results they will discover. In guided inquiry, the teacher reveals the problem situation that the students will solve and directs the students to the solution of the problem with various questions. The solution method is left open for students to determine according to their own preferences. Finally, open inquiry is research in which students develop a research question and prepare an implementation process that includes a data collection plan. In open research, the student does the research without teacher guidance. Schwab (1966) explained research inquiry-based learning at three levels that move progressively from the active role of the teacher to the student's activity: Level 1 Structured Inquiry: The problem and the solution are given to the student. The student knows the result of the problem. Level 2. Guided Inquiry: The problem is given to the student. The student reaches the result by determining the solution way of the problem himself. Level 3. Open Inquiry: the student determines all the stages himself. Structured Inquiry is the most used level of traditional teacher-centered approach. The teacher's instructions are given in a book called a "cookbook". It is a research-inquiry type in which the process steps with instructions are followed. High-level thinking skills cannot be expected in this inquiry type (Keller, 2001). The concept or principles are presented to the students by the teacher and the student is asked to complete his research by following carefully planned steps for validation. Since the student knows in advance what the result will be, he is not excited about the result he has obtained and doing research. Activities carried out to verify the questions with known answers at the structured inquiry level by following the given steps do not improve students' ability to conduct scientific research (Furtak, 2006). In Guided Inquiry, the teacher plays the role of helping students in their research. The teacher gives questions and basic information about the subject. The teacher encourages the students in the guided inquiry method and helps them to reach the answers (Furtak, 2006). In the guided inquiry type, activities related to the subject should be prepared in advance, and the thinking questions and problems that will enable the student to think should be at a level that develops the students' analysis, synthesis and

evaluation skills. In guided inquiry, the student investigates the questions and method given by the teacher and then determines the process of the research and the solutions. Although the questions are given by the teacher in guided inquiry, students actively manage the inquiry process. For this, the teacher must have a good idea of what results will emerge. This research was carried out according to the guided inquiry level, one of the levels suggested by Schwab.

Self-efficacy belief, which is one of the basic concepts of Social Learning Theory, is defined as "the individual's self-judgment about his capacity to organize and successfully perform the necessary activities to show a certain performance" (Bandura, 1998). Bandura (1998) explains self-efficacy belief with individuals' achievements, vicarious experiences, verbal persuasion, physiological and emotional states. Accordingly, success depends not only on having the necessary skills to do a job, but also on the effective use of the skill. Social learning theory suggests that a person's belief in performing a certain action or behavior will determine the behavior change or performance of that action (Tobin, Tippins, & Gallard, 1994). The higher our confidence in ourselves to be able to accomplish an action, the lower our anxiety level will be and the more likely we will be to take that action. Zusho and Pintrich (2003) defined 'Self-efficacy' as being aware of and believing in one's own abilities for performance and action. Self-efficacy belief affects the goals that individuals aim for, how much they can try to reach these goals, how much they can struggle with the difficulties they face to reach their goals, and their reactions when they fail to reach these goals (Çubukçu, & Girmen, 2007). Pajares (1996) stated that self-efficacy is a product of the individual's perception of what he can achieve by using his own abilities, and that self-efficacy belief is the subject of various studies that affect many aspects of the individual. Pajares (1996) stated that people with high self-efficacy beliefs are more resilient in being successful in a job, show persistence when faced with adversity, and are stubborn and patient. Göller (2015) defined self-efficacy belief as people's beliefs and perceptions about initiating, continuing and successfully completing an action related to a certain action. Inquiry-based self-efficacy is related to the effort students put into using their inquiry skills and to feel competent in using these skills. Students with high inquiry-based self-efficacy beliefs are expected to feel competent during the questioning process, to show sufficient effort and not to give up on difficulties (Feyzioğlu, 2019). In this study, it was aimed to determine the effect of guided inquiry method on the success and self-efficacy skills of the students in the subject of "strength and energy" placed in the 7th grade science curriculum. For this purpose, answers were sought to the following research questions:

1. What is the effect of guided inquiry learning on students' academic achievement?
2. What is the effect of guided inquiry learning on students' science self-efficacy?

### Method

In the research, a quasi-experimental method with pretest-posttest control group was used. The reason for choosing the quasi-experimental method is that it is not possible for the students in the sample to be assigned to the experimental and control groups impartially. The experimental view of the research is presented in Table 1.

**Table 1**

*Implementation Process of The Research*

Groups	Pretest	Application	Posttest
Experimental group	Achievement test Self efficacy	Guided inquiry	Achievement test Self efficacy
Control group	Achievement test Self efficacy	Science Curriculum (MoE, 2018)	Achievement test Self efficacy

Guided inquiry learning was applied to the experimental group. In the control group, on the other hand, the Science Curriculum (MoE, 2018) traditional method was used, in which the narrative method was

used more and the demonstration and closed-ended experiments based on the activities in the textbook were preferred more.

### **Participants**

The study was carried out with the participation of 7th grade students studying in a public secondary school in the southeast of Turkey in the fall semester of the 2021-2022 academic year. The groups participating in the study were determined by the school administration as the experimental (20) and control (20) groups from the pre-formed classes in the form of random distribution.

### **Data Collection Tools**

In the research, "Science Self-Efficacy Scale" and "Strength and Movement Academic Achievement Test" were used as data collection tools. The Science Self-Efficacy Scale is a Likert-type scale consisting of 36 items. In the study, the reliability coefficient was found to be 0.917 (Yıldırım, 2017). In the research, "Strength and Movement Academic Achievement Test" was applied in order to determine the effectiveness of process-oriented guided inquiry learning on the 'force and energy' unit of students' learning levels. The achievement test developed by Kınık (2015) consists of 19 multiple-choice questions. The Cronbach Alpha value of the test was found to be 0.820 and the KR-20 coefficient as 0.835 (Kınık, 2015).

### **Application**

In the application process of the study, while the Science Curriculum (MoE, 2018) traditional method was taught by the researcher in the control group, the lessons were taught according to the guided inquiry method in the experimental group. In the control group, the traditional method lesson plans were prepared by the researcher based on the activities and experiments according to the science curriculum created by the Ministry of National Education. In the control group, the lessons were taught by paying attention to the fact that the textbook was in the center, that the students could reach the information by reading or listening to the teacher, and that the questions were asked by the teacher and had only one answer. The lessons were mainly in the form of demonstration experiments in which the presentation and question-answer method was used and the experiments were performed by the teacher, and the teacher-centered traditional teaching method was applied. In the first stage, the students in the experimental group were informed about the definition of doing research, its benefits, stages, identifying problems, establishing hypotheses, data collection techniques, data analysis, testing hypotheses, presentation of the obtained information, research ethics. In the experimental group, the students were divided into heterogeneous groups of 4-5 people. At the beginning of each research process, the lesson was started with questions and case studies that would attract the attention of the students. Afterwards, it was tried to reveal the pre-knowledge of the subject by enabling the students to brainstorm on the subject. After the study groups were formed, the worksheet titled "I'm Doing Research" was distributed to the students, showing the steps to be followed during the research and guiding the students in this regard. In order for the students to get used to the process and to have an idea about how the studies will be carried out, a common research topic was determined for all groups for the first application. The process was carried out jointly by performing the same procedures (same research problem, same hypotheses, same method-techniques, etc.) in all groups under the guidance of the teacher. After the second week, each group determined their own research topic, research problem and hypotheses in line with the achievements. After the research problem they determined with their group friends, the students determined their research hypotheses by brainstorming with their friends. In this process, the teacher guided all the groups and guided the groups with appropriate feedback for the process to proceed correctly. The application process was guided by the cooperation of the teacher and the researcher, the application and student studies were followed by the researcher and control was provided to ensure that the studies are carried out in accordance with the purpose. In line with the received opinions, the joint decisions taken in the group shaped the process. The studies prepared by the group were presented in the class. The application process was completed by applying simultaneous post-tests in the experimental and control groups.

## Analysis of Data

The data collected through the academic achievement test (pretest-posttest) and self-efficacy test (pretest-posttest) during the research were analyzed with the help of the SPSS program. In the research analysis, first of all, it was examined whether the data showed a normal distribution. Since the scores of the tests showed a normal distribution, parametric tests were used to find answers to the research questions. Independent groups t-test analysis was conducted to determine whether there was a significant difference between the pre-test academic achievements of the experimental and control groups. As a result of the independent groups t-test analysis, a significant difference was found between the pre-test scores of the groups' self-efficacy skills. Therefore, ANCOVA analysis was performed, and averages adjusted with the Bonferroni test were included. ANCOVA analysis makes it possible to determine the true effect of the experiment by eliminating the external factors that cannot be controlled by the research study with a linear regression method in cases where there are differences between the groups at the beginning of an experimental application (Büyüköztürk, 2010).

## Results

For the purposes of the research, it was examined whether there was a significant difference between the academic achievement and self-efficacy of the experimental and control groups. In the study, descriptive statistical findings related to the experimental and control groups were examined (Table 2).

**Table2**

*Descriptive Statistics of Achievement and Self-Efficacy Scales*

		<b>Achievement</b>	<b>Self-efficacy</b>
<b>Pre-test</b>	<b>M</b>	30.18	99.3
	<b>Median</b>	28.60	101.5
	<b>Variance</b>	304.3	325.9
	<b>Min.</b>	7.1	57
	<b>Max.</b>	78.5	137
	<b>Skewness</b>	.711	-.091
	<b>Kurtosis</b>	.051	.076
<b>Post-test</b>	<b>M</b>	53.43	123.1
	<b>Median</b>	50.0	124.0
	<b>Variance</b>	527.2	234.1
	<b>Min.</b>	21.4	87
	<b>Max.</b>	100	156
	<b>Skewness</b>	.309	-.170
	<b>Kurtosis</b>	-.149	-.294

When the descriptive statistics of academic achievement and self-efficacy scales are evaluated in Table 2, pre-test skewness (.711) and kurtosis (.051), post-test skewness (.309) and kurtosis (-.149); In the self-efficacy scale, pre-test skewness (-.091) and kurtosis (.076), post-test skewness (-.170) and kurtosis (-.294) values were calculated and it was seen that the data showed a normal distribution. After it was determined that the data showed a normal distribution in the study, the academic achievement pre-test scores of the experimental and control groups were examined with the independent samples t-test.

**Table 3**

*Group Statistics of Pre-Test for Comparison and Experimental Groups*

Test	Group	n	M	ss	sd	t	p
Achievement	Experimental	20	27.84	15.52	38	-.846	.403
	Control	20	32.52	19.29			

When the results in Table 3 are examined, it is seen that the academic achievement pre-test mean of the experimental group was 27.84 (sd=15.52) and the pre-test mean of the control group was 32.52 (sd=19.29). According to the pre-test results, there was no statistically significant difference, at the 0.05 level, between the pre-test academic achievement scores of the experimental and control groups ( $t = -.846, p > 0.05$ ).

In order to examine the effect of guided inquiry learning on the academic achievement of the students, the academic achievement post-test data of the experimental and control groups were analyzed with the independent t-test (Table 4).

**Table 4**

*Independent Samples T-Test of Achievements' Post-Test for Comparison and Experimental Groups*

	Group	n	M	ss	sd	t	p
Achievement	Experimental	20	71.59	15.89	38	5.828	.000*
	Control	20	43.29	13.80			

\* $p < 0.05$

When the independent t-test results regarding the difference between the academic achievement post-test scores of the experimental and control group students are examined, it is seen that the post-test achievement mean score of the experimental group is 71.59 (sd=15.89), and the post-test achievement mean score of the control group is 43.29 (sd=13.8) ( $t = 5.828, p < 0.05$ ). When Table 3 is examined, it has been determined that there is a significant difference between the post-test mean of the experimental and control groups in favor of the experimental group. With this result, it can be deduced that guided inquiry learning improves students' academic achievement.

In line with the second aim of the study, the mean and standard deviation values of the pre-test and post-test scores of the science self-efficacy skills of the experimental and control groups were examined (Table 5).

**Table 5**

*Mean and Standard Deviation Values of The Groups' Self-Efficacy Pretest-Posttest Scores*

Self-efficacy	Experimental group			Control group		
	n	M	ss	n	M	ss
Pre-test	20	93.45	16.80	20	105.20	17.71
Post-test	20	129.95	12.37	20	116.35	15.16

Table 5 shows how much the self-efficacy pre- and post-test mean scores of the groups have changed. The self-efficacy pre-test mean score of the experimental group students ( $M = 93.45$ ), the self-efficacy pre-test mean score of the control group students ( $M = 105.2$ ); The self-efficacy post-test mean score of the experimental group students was calculated as ( $M = 129.95$ ), and the self-efficacy post-test mean score of the control group students was calculated as ( $M = 116.35$ ). Independent groups t-test analysis

was performed to determine whether there was a significant difference between the science self-efficacy pre-test scores of the groups and the findings are shown in Table 6.

**Table 6**

*Group Statistics of Self Efficacy Pre-Test for Comparison and Experimental Groups*

Test	Group	n	M	ss	sd	t	p
Self-efficacy	Experimental	20	93.45	16.8	38	-2.152	.038*
	Control	20	105.2	17.71			

\*p<0.05

It was calculated that the self-efficacy pre-test mean score of the control group (M=105.2) was higher than the self-efficacy pre-test mean score (M=93.45) of the experimental group. As a result of the independent groups t-test analysis, the difference between the pre-test scores of the groups was found to be statistically significant ( $t_{(38)}=-2.152$ ;  $p=.038$ ). ANCOVA analysis was performed to determine to what extent the post-test scores differed due to the difference between the pre-test scores of the groups, and whether the difference resulting from the change was significant. Averages corrected with the Bonferroni test are included. Self-efficacy post-test scores were taken as covariate in ANCOVA analysis. The results are shown in Table 7.

**Table 7**

*Ancova Results of Post Test Means Adjusted According to Self Efficacy Pre-Test For Experimental and Control Groups*

Source of variance	Sum of squares	df	Mean squares	F	p
Self-efficacy pre-test	404.21	1	404.21	2.175	.149
Groups	2230.69	1	2230.69	12.00	.001
Error	6877.28	37	185.87		
Total	615768.0	40			
Adjusted Total	9131.10	39			

In Table 7, ANCOVA analysis results were adjusted according to the pre-test scores, and the main effect of grouping of the post-test scores was found to be significant ( $F_{(1-37)}=12.00$ ,  $p=.001$ ). In other words, ANCOVA analysis was performed with the average of the post-test scores of the groups. As a result of this, a significant difference was determined in favor of the experimental group students according to the common effect results. In order to express the determined significant difference more clearly, the final status of the mean and adjusted mean values of the groups' self-efficacy post-test scores are given in Table 8.

**Table 8.**

*Descriptive Statistics of The Groups' Post-Test Scores*

Group	N	M	Adjusted means
Experimental	20	129.95	131.06
Control	20	116.35	115.24

According to the adjusted pre-test mean scores of the experimental and control groups, it was determined that the self-efficacy skills of the experimental group changed more positively than the control group. In other words, it was determined that the guided inquiry method had a more positive effect on students' science self-efficacy skills than the traditional teaching method.



### Discussion, Conclusions, and Suggestions

In the study, the effect of guided inquiry-based learning on secondary school students' academic achievement and self-efficacy skills was examined. As a result of the analysis of the data obtained from the study, there was no significant difference between the experimental and control group pre-tests. According to this result, it can be said that the experimental and control groups were similar in terms of academic achievement before starting the application. When the post-test success scores of the experimental and control groups applied at the end of the process were analyzed, it was determined that there was a significant difference between the groups and this difference was in favor of the experimental group. This finding shows that guided inquiry-based learning applied in the experimental group is more effective on the academic achievement of students in terms of 'strength and energy' compared to the traditional teaching model applied in the control group. When the literature is examined, it is seen that there are many studies (Germann, Aram, & Burke, 1996; Marx, Blumenfeld, Krajcik, Fishman, Soloway, Geier, & Tal, 2004; Orcutt, 1997; Taşköyan, 2008) with similar results. Bopegedera (2007), in his research in a guided inquiry-based chemistry laboratory, found that students' success in the subject increased. In this study, the activities carried out by the students in the classroom provided a better understanding of the subject and concepts. Since simple experimental equipments are used in the experiments used in the activities developed in the study, it can be easily applied in schools that do not have advanced science laboratories. However, there are also studies in the literature that do not support this result. In their study, Yıldırım and Berberoğlu (2012) compared the lessons based on guided inquiry and lecture method while teaching the 'force and motion' unit and found that there was no significant difference in improving the academic achievement of the students. Similarly, Köksal (2008) and Serin (2009) found in their study that guided inquiry-based learning in the unit of 'force and motion' did not make a significant difference in the academic achievement of students. In the study, the effect of guided inquiry-based learning on students' science self-efficacy skills was investigated. As a result of the analysis, it was seen that the self-efficacy pre-test score of the control group students was higher than the pre-test score of the experimental group. When the pretest means of the experimental and control groups were compared, a significant difference was found in favor of the control group. When the pre-test scores of the experimental and control groups were taken under control and analyzed, a significant difference was found between the adjusted post-test scores of the groups in favor of the experimental group. According to this result, it can be said that the level of guided inquiry improves students' self-efficacy. In addition, this result can be deduced that the level of guided inquiry enables students to be more successful in doing science and to show persistence, stubbornness and patience when faced with adversity. Sağdıç (2018) examined the effects of guided inquiry-based learning on students' academic achievement, conceptual understanding, scientific process skills and attitudes towards the disciplines of Science-Technology-Engineering-Mathematics, and found that guided inquiry-based learning had an effect on students' scientific process skills. In his study, Ozan (2018) determined that there was a significant difference in favor of the experimental group among the achievements of students in guided inquiry-based science teaching, but there was no significant difference between attitude and self-efficacy scores. Feyzioğlu (2019), in his study examining the relationships between inquiry-based self-efficacy, achievement goal orientation, learning strategies and inquiry skills variables, concluded that inquiry-based learning does not improve students' self-efficacy skills. However, when the literature is examined, it is seen that self-efficacy is important in science teaching. According to the definition of Bandura (1994), the formation of self-efficacy in science teaching is a special case of structuring. Therefore, it is important to examine the role of self-efficacy that determines students' learning and effectiveness of teaching in science teaching (Duran, Ballone-Duran, Haney, & Beltyukova, 2009). A sense of self-efficacy develops when students begin to be successful. Based on the findings of the study results, it was concluded that there was a significant difference in the effectiveness of guided inquiry strategy in improving the academic performance and self-efficacy skills of students in a secondary school located in the southeast of Turkey, as those exposed to guided inquiry strategy performed better than the other group. Also, there was a significant difference between the groups exposed to guided inquiry and science curriculum (2018), as students taught science using guided inquiry performed better than those in the control group. Furthermore, the

study concluded that guided inquiry was a better teaching strategy, as it was more effective in improving the academic performance and self-efficacy skills of secondary school students in the study area. Based on the findings of the study, it is recommended that the use of innovative teaching strategies such as guided inquiry teaching strategy should be encouraged as it was found to be useful in improving students' academic performance. Furthermore, further studies should be conducted to determine the effect of guided inquiry teaching strategy in teaching and learning of other subjects.

### Research and Publication Ethics

In this study, all rules specified in the "Directive on Scientific Research and Publication Ethics of Higher Education Institutions" were followed. None of the actions specified under the second section of the Directive, "Actions Contrary to Scientific Research and Publication Ethics", have been carried out.

### Disclosure Statements

1. Contribution rate statement of researchers: Author 100%.
2. No potential conflict of interest was reported by the author.

### CRedit authorship contribution statement

Gamze KIRILMAZKAYA: Writing – review & editing, data collection, data analysis, methodology, conceptualization

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## Peace Education Activities Suggestions for Children with Circle Time Practices<sup>1</sup>

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### Abstract

Peace as a value makes sense when there is no war. Peace is living in harmony and not fighting others. Peace is a calm and relaxed state of mind. By reflecting on the full and serious meaning of peace, new and creative ways can be found to facilitate people's understanding of friendship and cooperation. It is important to teach peace in these ways in early childhood. Circle time, also called group time, refers to any time when a group of people, usually young children, sit together for an activity in which everyone is involved. This study is about how to introduce peace to kindergarten students as a circle time practice. Peace as a value is included in the twelve living values. Peace as a philosophy and value is the practice of not being hostile to each other in the education of friends. It is based on the expression of feelings and thoughts by a large number of participants, especially at a young age. The circle time practices developed by Mosley (2006) are practiced all over the world at all levels of education, especially in kindergartens. Circle time practices are structurally democratic. Opinions are expressed in turn. Each participant should respect each other's opinions. In this study, the circle time practice was outlined and four activities that can be used in peace education were introduced. The effects of the practices on different age groups are suggested for future research.

**Keywords:** Peace, circle time, kindergarten student.

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### Introduction

Circle time, also called group time, refers to any time when a group of people, usually young children, sit together for an activity in which everyone is involved. Circle time provides a tried and tested framework for increasing self-esteem and positive behavior for everyone in the school. A typical circle time is a meeting once a week for an hour to discuss and try to solve common problems (Mosley, 1993: 6-9). Circle time is a universally used approach to enhancing social emotional learning in schools around the world. Murray White was the first British author to publish a book on circle time and Magic Circles raised the profile and popularity of circle time in the 80s. In circle time, children are encouraged to develop their social emotional learning in a caring and safe environment with a child-centered and child-led approach (Mosley, 2006). As the teacher takes on a more facilitative role, students take a more active role in their learning within a structure that facilitates and encourages them to respect each

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other, listen to each other, appreciate each other's views and perspectives, and engage in collaborative problem solving. Learning is experiential, involving strategies such as games, role playing, small group work, singing and physical activities. In such an environment, students not only learn specific targeted skills, but the process itself is embedded in a powerful social and emotional learning experience.

There are limited studies on the effectiveness of circle time practices in schools (Cooper & Jacobs, 2011; Lown, 2002; Mosley, 2009). In addition, it has been observed that there are undesirable situations caused by untrained teachers (Taylor, 2003). This study is about how to introduce peace to kindergarten students as a circle time application.

### **Method**

This research was carried out with qualitative research and document analysis techniques. In qualitative research, data is collected through observation, interviews and documents (Creswell, 2007). This is followed by data analysis. According to Miles and Huberman (1994), qualitative data analysis; consists of three stages: collecting data, reducing data, displaying data, drawing conclusions, and validating. While analyzing the collected data, techniques such as discourse analysis and document analysis are used in addition to descriptive and content analysis (Yıldırım & Şimşek, 2016). Document analysis is a scientific research method defined as collecting, reviewing, questioning and analyzing various documents as the primary source of research data. While this method often complements other research methods in the literature, it is also used as a stand-alone method. The research is a descriptive study, and the data were obtained from the related literature by document analysis method and analyzed. In addition, distance education practices in the teacher training system in different countries and Turkey were examined and evaluated.

### **Findings and Discussion**

Education should also teach children the values of preventing violence, respect, equality, democracy, dialogue and cooperation. Education aims to develop and liberate children's ideas. Teaching how to make the world livable for future generations is also one of the basic tasks of education (Hakvoort, 2010, 292). According to views that advocate the teaching of the value of peace in pre-school education, people do not forget the values they acquired as children throughout their lives and it is easy to acquire these values at this age. Therefore, peace should be taught to children as a value in pre-school education (Bar-Tal, Rosen & NetsZehngut, 2010: 34). In this section, after briefly explaining the concept of peace, peace education and the Circle Time model as an approach to providing peace education in the pre-school period are introduced and sample activities are given.

### **Peace Education**

The word peace is generally used to mean the absence of hostility. The concept of peace can also be defined as salvation from evil, fights, wars, harmony, unity, integrity, tranquility, silence, and living in peace (Royce, 2004). In world history, periods of complete peace are very limited, and wars have always continued, more or less. The Latin term *pax*, meaning peace, is used for periods that have been relatively peaceful for certain regions at certain times (Özerdem, 2013). Three basic definitions of peace stand out in the literature of peace studies. These are; peace according to John Burton's theory of needs, the distinction between negative peace and positive peace put forward by Johan Galtung in his approach to peace through peaceful means, and Kenneth Boulding's stable/sustainable peace concepts. Peace is generally perceived as a weak and passive situation, often equated with passivity in society. In other words, what generally comes to mind is negative peace, meaning the absence of armed conflict and hot war. However, another form of peace is called positive peace, which includes everything from a stable economy to social equality and the absence of all forms of discrimination, as well as access to basic services such as education and health. For example, if a person lives without being able to use all their talents and potential, this means that complete peace cannot be achieved. True peace is possible only when everyone can live their full potential without interruption (Galtung, 1969).

The most important skill that we urgently need to learn and develop as humanity at the beginning of the 21st century is to completely change our way of thinking about war and violence; to learn and teach ways to solve problems, disagreements and conflicts in every context and level with constructive



and peaceful means using scientific and multidisciplinary methods. Although traditional social sciences discuss violence and conflict within the framework of their own disciplines, each of them evaluates human behavior within the narrow sections of their own fields of interest (Kök-Arslan, 2015).

Peace education also encourages empathy and compassion, teaching individuals to understand the experiences and emotions of others. By cultivating empathy, individuals develop a greater sense of unity and connectedness to others, enhancing their willingness to help and support those in need. This empathy-driven approach empowers individuals to be agents of peace and play an active role in making a positive difference in their communities (Zembylas, 2007). Furthermore, peace education helps individuals develop conflict resolution skills. It equips them with the tools to resolve conflicts through dialogue, negotiation, and mediation, rather than resorting to aggression or violence. These skills go beyond personal conflicts and can be applied to various levels, from interpersonal relationships to international conflicts (Bercovitch & Dean, 2009).

### **Jenny Mosley's Circle Time Core Model for Peace Education**

Over the last three decades, Jenny Mosley has developed her highly successful school and classroom management models based on teaching experience, research and collaboration between Consultancy, Local Education Authorities and schools. Jenny's core model, Quality Circle Time (QCT), encompasses a whole school approach to boosting self-esteem and building positive relationships in your school communities (amazon, 2021). Jenny Mosley's quality circle time model involves creating an ongoing, timed process of circle meetings for adults and children. As a foundation for teaching relationship skills, increasing self-esteem, and establishing a positive behavior management and anti-bullying policy, circle time will not only increase confidence and "emotional intelligence" in students, but also contribute to a positive whole school ethos (Mosley & Tew, 2013).

#### ***Creating the Right Conditions***

Between 6 and 18 participants is the best number. Any more than that and it becomes difficult for everyone to take a full part in the proceedings. An open chair or a circle of cushions is all the equipment needed. There should be no tables or benches to act as barriers or to support collapsing heads!

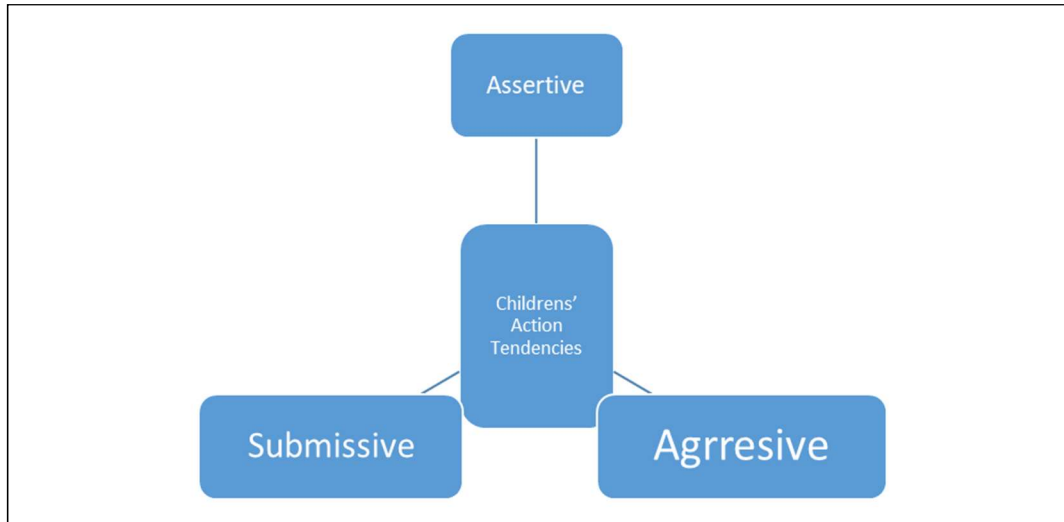
Care should be taken to make the circle as perfect as possible and to allow every face to be seen by all other participants. Many schools also use a "talking object" to facilitate discussion. The talking object can be anything - a teddy bear or other cuddly toy, a cushion or a decorated piece of wood or plastic. This talking object is passed around the circle and the only person allowed to speak is the person holding the talking object.

1- *What does the teacher do?:* The teacher is part of the circle and sits on the same kind of chair or cushion as everyone else. This helps to point out that what happens is a special type of classroom activity where the teacher is more of a facilitator than a director. He or she has a special responsibility to ensure that the agreed rules are followed, that the feelings of individuals are protected and that appropriate activities are prepared. The teacher should also be prepared to end a session if students are persistently breaking the rules. This can happen especially in younger circles and it is important that the failure of a session does not lead to abandonment of the method. For some students this type of activity, where they are encouraged to take responsibility for their own words and actions, is new and takes some getting used to.

2- *What are the rules?* The most important thing about circle time rules is that they need to be discussed and agreed by all members. This is one of the first activities to be done. Here are the three basic rules that need to be discussed: Only one person should speak at a time - the speaking object helps with this rule About something you can "pass" if you don't want to talk. The first one helps to create order and encourage people to listen to others. The sending and third help to ensure the emotional safety of the children involved: no one should be forced to talk about something they find embarrassing, and no one should be ridiculed for saying something they really believe - but others may disagree with their views. The group can articulate these rules in other ways and add extras.

A children behavior can be submissive, aggressive or assertive. In general parents and educators requires show assertive behaviour from children (Deluty & Usakli, 2009). According to Deluty & Uşaklı (2009), childrens' action tendencies in the Figure 1.

**Figure 1.** Childrens' Action Tendencies



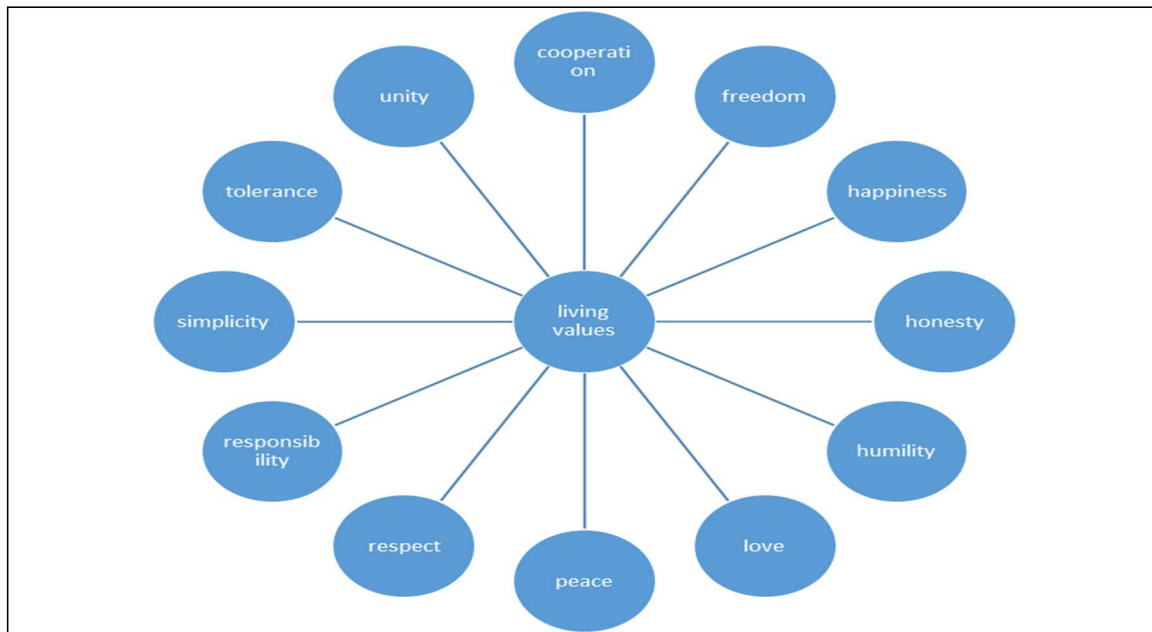
The living values series offers a variety of experiential activities for teachers and parents to help them teach children and young adults to develop twelve critical social values.

The text emphasizes the significance of living values in personal, relational, and societal contexts, calls for individuals to prioritize and practice these values in their daily lives, and concludes with a discussion on their potential global impact.

Teaching living values (Figure 2), not only important for children but also for young people (Uşaklı, 2016).

Living Values Education Program (LVP) is a global collaborative of educators and others dedicated to creating a values-based atmosphere in homes, schools, and communities. Globally, children are impacted by acts of violence, escalating societal issues, and a lack of regard for one another and their surroundings. Many educators and parents feel that implementing programs that raise students' knowledge of universal moral standards in the educational system is the way to address the growing degree of conflict (Hassan & Kahil, 2005). The objectives of LVEP are as follows: (a) to assist people in considering and thinking through various values and the practical consequences of expressing them; (b) to enhance comprehension, motivation, and responsibility regarding making positive choices in the personal and social spheres; (c) to motivate people to make choices based on their own moral, ethical, and spiritual principles; and (d) to encourage educators and caregivers to view education as giving students a philosophy of living (Tillman, 2000). Cooperation, freedom, happiness, honesty, humility, love, peace, respect, responsibility, simplicity, tolerance, and unity are the twelve main global ideals of the program.

**Figure 2.** Living Values



***Matters to be followed in practice and Application Examples***

In today's fast-paced world, teaching children's values has become more crucial than ever before. In an era where technology dominates our lives and instant gratification is highly valued, instilling moral and ethical values in children has become paramount. While academics are important for a child's growth and development, teaching values ensures that children grow up to be responsible, compassionate, and respectful individuals (Eyre & Eyre, 1993). One of the key reasons why teaching values is crucial is that it helps children distinguish between right and wrong. Values act as a compass, guiding children towards making ethical decisions and treating others with kindness and empathy. By teaching children about values such as honesty, integrity, and fairness, parents and educators equip them with a moral framework that shapes their behavior in various situations.

Below are some examples of teaching peace to preschool children as a circle time activity:

In Appendix 1 the meaning of peace is illustrated and sloganized.

In Appendix 2 peace is taught by friendship ring play. Yarns and scissors materials are needed.

In Appendix 3 two concepts illustrating these are peace and quiet. Large sheets of paper, marker, tape player, tape cassette with familiar sounds recorded are those materials needed.

In Appendix 4 the theme of being fair is taught. This activity illustrates all circle time activities in whole.

**Conclusion**

According to UNESCO (2005), the purpose of Peace Education can be explained as instilling the purpose and importance of peace culture, re-accepting and confirming the value and dignity of each person, creating an environment of justice and respect, providing the ideal equality they think of for women, developing activities that include developing the skills and values that structure the culture of peace, considering both peace and peace education as a reflex that integrates them even more, combating prejudices between societies, developing relations between societies, seeking disarmament for peace in the world and peaceful solutions to wars, examining international cooperation and conflict, studying current problems and events, presenting information that is true, developing tolerance education and moral thinking skills, critical thinking and judicial independence. The basic idea here is to teach holistic thinking. The skills that are desired to be acquired in this learning; It can be expressed as being aware of our prejudices, knowing ourselves, being able to empathize, having critical thinking, respecting all

individuals without discriminating against anyone and without being stuck with a single identity, protecting everyone's rights equally, learning to control anger and forgive, and searching for ways of tolerance by emphasizing the words compromise and solution.

In conclusion, this research paper highlights the significance of cultivating living values in both personal and societal contexts. It emphasizes the role of education and upbringing in instilling these values in individuals, as well as the importance of role models and mentorship in promoting them. By recapitulating the main findings and arguments presented throughout this paper, it is evident that prioritizing and incorporating living values in our lives and practices is crucial for creating a harmonious and ethical society. Therefore, it is imperative for individuals and institutions to take action and make a conscious effort to embrace these values in order to foster positive change.

During circle time in the classroom or at home, teaching children about peace can be a powerful and impactful experience for them to learn valuable life skills at a young age. Here are some ideas for activities and discussions that can promote peace:

- 1- Encourage active listening: Encourage children to listen carefully to others when they are speaking. This can help them understand different perspectives and learn to respect others' opinions.
- 2- Practice empathy: Help children understand how others might be feeling by asking questions like, "How do you think she's feeling right now?" or "What do you think he might need right now?"
- 3- Teach conflict resolution: Discuss ways to resolve conflicts peacefully, such as taking a deep breath, listening to the other person, and finding a solution that works for everyone.
- 4- Promote kindness: Encourage children to be kind to others and to treat others as they would like to be treated. This can help them develop a sense of compassion and empathy.
- 5- Practice gratitude: Encourage children to express gratitude for others and for the things they have. This can help them develop a positive outlook and a sense of appreciation for others.

School is a place where children build a foundation for their lives. While academic excellence is predominantly emphasized, schools also need to focus on character development through the dissemination of moral values. It is important to prepare children for an honest and virtuous life. The need is greater at a time when many evils have crept into every sphere of life. Teachers need to devote time to the character development of children. There is a widespread attitude among children that values are picked up automatically or have no relevance in modern practices. It is very necessary to change that attitude from school itself. Values require knowledge and understanding. Since values have to be dealt with while seeking shade for the mind in the fast-running world, it is necessary to use some instructional techniques. The whole desirable value system in society can be understood either uniquely and individually or in a combined way. Either way, common values can be discussed. It is noted that using Circle Time for teaching moral values generates a lot of interest among children. Children from various backgrounds are able to understand common moral values better. Circle Time, in itself, is a very interesting activity to engage students in discussions. Here, moral values are discussed openly. Children are free to express their views. They are given importance. More than lecturing, debating is given priority. The worth of an individual is appreciated. One's understanding is broadened, generating respect for other individuals. Different values like speaking the truth, helping the poor and needy, and achieving goals are discussed, elaborating on their importance for being a good and virtuous citizen. education, especially in kindergartens. Circle time practices are structurally democratic. Opinions are expressed in turn. Each participant should respect each other's opinions. In this study, the circle time practice was outlined and four activities that can be used in peace education were introduced. The effects of the practices on different age groups are suggested for future research.

### **Research and Publication Ethics**

In this study, all rules specified in the "Directive on Scientific Research and Publication Ethics of Higher Education Institutions" were followed. None of the actions specified under the second section of the Directive, "Actions Contrary to Scientific Research and Publication Ethics", have been carried out.

### Disclosure Statements

1. Contribution rate statement of researchers: First Author 50%, Second Author 50%
2. No potential conflict of interest was reported by the author.

### CRedit authorship contribution statement

Hakan Usakli: Writing – review & editing, Methodology, Conceptualization.

Zeynep Eren: Writing – review & editing, Methodology, Conceptualization.

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## Appendix 1.

### Activity 1 What does it mean peace?

Age: 5 +

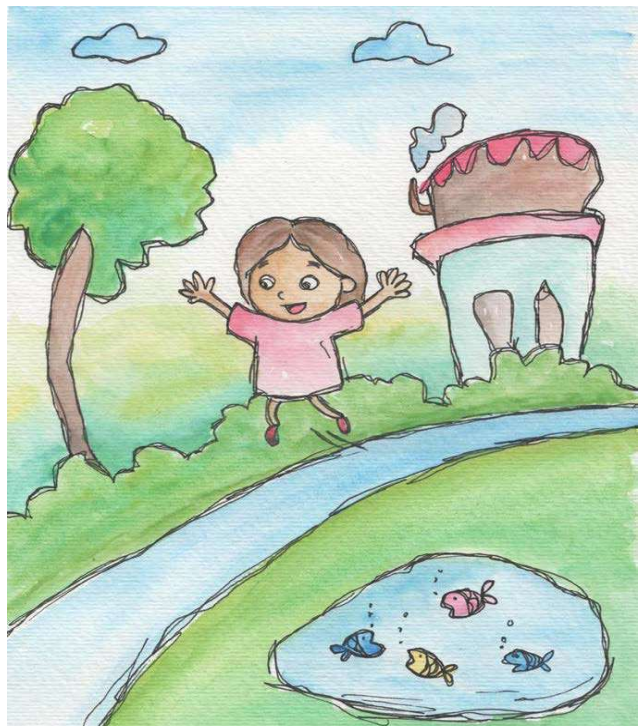
Materials: Picture

Process: Teacher hangs on the picture. Reads the what is peace look like and the students repeats after.

Peace is living in harmony and not fighting with others. If everyone in the world were peaceful, this would be a peaceful world. Peace is being quiet inside.

Age group: 3-7 years

- Peace is being quiet inside
- Peace is having good feelings inside.
- Peace is when people get along and don't argue or hit.
- Peace is having positive thoughts about myself and others.
- Peace begins within each one of us.



Livingvalues, 2023

## Appendix 2.

### Activity 2 Friendship Ring

Age: 6 +

Materials: Yarn, Scissors

Process: Cut a length of yarn long enough for each child to hold onto part of it. Tie the ends of the yarn together to make a circle. Spread the yarn circle out on the floor. Have the children stand around the circle, hold onto a section of yarn in front of them, and pick it up while you recite the following rhyme:

*"There is a friendship ring. That holds us all together. Each part that is there Is as important as the other No matter who you are, No matter where you've been, We're all together In the ring of friends. The friendship ring Holds our hands and hearts. There isn't anything That could keep us apart."*

Tell the children that the yarn circle they are holding is their friendship ring. Have them hold their friendship ring high in the air and low to the ground. Ask them to wiggle it and move it slowly up

and down. Have them think of other ways to move the yarn. Tell the children that each of them has a friendship ring filled with friends and people they've met people who should be cared for and respected. Then ask two or three children to let go of the yarn ring. What happens? The friendship ring starts to fall down. Explain that this is just like our real ring of friends; we need everyone to make it complete (Bitinger, 2004: 18)

### **Appendix 3.**

#### ***Activity 3 Peaceful and Quite by Melissa Browning***

Age: 4 +

Materials: Large sheets of paper, Marker, Tape player, Tape cassette with familiar sounds recorded.

Process: 1. Draw a vertical line to divide the paper in half. 2. Children sit in a circle where they can see the paper. 3. Ask each child to think of a sound that is peaceful and quiet. 4. List the children's responses on one side of the sheet of paper. 5. After the list is completed have children name things that are loud and not peaceful. 6. List these things on the other side of the paper. 7. Ask the children to listen to the tape of familiar sounds. 8. On another sheet of paper list, the sounds as the children identify them. 9. Ask the children to sort the recorded sounds into the two categories of peaceful and not peaceful. More to do: Encourage the children to become aware of peaceful sounds they hear during the day and how they feel when they hear these sounds (Charner, 1996:127).

### **Appendix 4.**

#### ***Activity 4 Being Fair***

Age: 4 +

Materials: no

Aim: To help the children to understand what being fair means and too consider:

- the citizenship aspect of fairness to all equal opportunities and human rights
- the importance of including everyone in games and work people's right to think differently
- respecting others' opinions respecting others' possessions
- the importance of sharing.

Process: Children begin with a Circle Time activity which provides a starting point for the topic. Further activities include role-play, discussion, story endings and art and craft work. The way in Start Circle Time by:

- asking the children to tell you what 'being fair' means
- talking about letting people play with your friends
- thinking about sharing things and time
- talking about being loyal to people
- talking about it being easy to be fair to friends, but what about other people who are not your friends?
- making sure we don't exclude people from our groups
- listening to other people's views
- taking care of people's feelings and possessions.

Then:

- ask the children to close their eyes and think of a picture of themselves being fair to people at school
- ask them to keep their eyes closed and to think of how they can show they are being fair show them the paper you have prepared for their drawings
- explain that they are all going to draw a picture today, but that you want their pictures to be like the picture they had in their own head - not to look at what someone else is drawing.

### ***Draw and Talk activity***

Ask the children to draw a picture of themselves being fair to someone at school.

When all the children have drawn their pictures, take the children to a quiet area, one at a time, to talk about their pictures. Start by asking the child to tell you about their picture and write down the keywords s/he says in the top right-hand corner of the picture. Then ask the following questions:

*"Who are you being fair to?" "What are you doing that shows you are being fair to them?" "What other things do you do to be fair to other people?"* Again, write the appropriate keywords on the child's drawing. Explain that you want to keep these pictures safe and put them in a pile until all the children have had their turn at talking with you about their picture. You can count the number of relevant responses if you want to make a comparison with the reflection activity. Tell the children that in Circle Time they can talk about some of the things that they have told you about their pictures. Make a display with the children's pictures. Ask the children to suggest a title for the display and to suggest questions, words or phrases to add to it.

### ***Circle Time activity***

Talk about the pictures that the children have drawn. If they have been displayed on the wall, look at each one, talk about it and praise the child who drew it. Ask the children to remember the different ways in which people can be fair to each other. Ask for volunteers to tell the circle what they have drawn. Jot down these ways of being fair until you have a list. Ask the children if they can add to the list. Do they listen to and respect what friends and other people say even if they don't agree with them? Being Fair waiting your turn not pushing in let people play with you let them have a turn share the toys not splash in the water careful with sand wait for drinks think how people feel look after people listen in Circle Time don't interrupt

Read out the list with the children and ask them if they can put the list into order important way of being fair first. Ask the children to touch their ears if they can tell you how to be fair to new/different children and wave a hand if they can tell you how they look after other people's things with the most touch their chin if they can tell you how people in shops are fair to waiting customers put hands together if they can tell you how people waiting for a bus are fair.

Select volunteers to tell the circle how people are fair in these situations. Now ask the children to think about when they or other people at school say, "It's not fair!" Ask volunteers to tell the circle about these times. *"Can they make a list of these things? Can they put them in order - with the most important one first?" "Can they think of things that are fair at home? Does everyone there get the same pocket money, go to bed at the same time, do the same amount of helping?" "Ask volunteers to tell the circle how their families make sure that things are fair at home".*

### ***Reflection and evaluation in Circle Time***

Use the display you have made with the children's pictures – praise the work and read the captions. Remind the children of all the ways that people can be fair.

Remind them about how people feel when everything is fair - when people are fair to others, everyone feels good about it. Can they find on the display, the words they gave you describing how good you feel about being fair?

Remind the children about playing fair and being fair. Can they think of examples of when sportsmen have been fair in their games? Can they think of examples of when people have done something brave to help someone else, even though they might not have enjoyed doing it? (You may find examples in local newspapers or on TV.) You could do the Draw and Talk again to see how many more examples of being fair the children now depict.

You can make a new and longer list of all the keywords and phrases used in the second Draw and Talk activity.

Student

waiting not pushing taking turns sharing

thinking of other people letting people play

not hurting smaller people choosing different people listening to people

staying friends even when you don't agree (Collins, 2006: 11-35)

## The Relationship Between School Principals' Personality Traits and Teachers' Psychological Well-being<sup>1</sup>

Mehmet YILMAZ<sup>2</sup>, Tuğba HOŞGÖRÜR<sup>3</sup>

### Abstract

The aim of this study is to examine the relationship between school principals' personality traits and teachers' psychological well-being. The research is designed in a relational survey model. The population of the study consisted of teachers working in schools in the Dalaman district of Muğla province during the 2023-2024 academic year. The sample of the study consists of 405 teachers selected from this population using the disproportionate cluster sampling technique. The data were collected using the 'Big Five Personality Scale' and the 'Psychological Well-Being Scale.' Descriptive statistics, t-test, one-way analysis of variance (ANOVA), Pearson correlation analysis, and regression analysis were used to analyze the data. The results obtained from the study show that teachers exhibit a high level of psychological well-being. While teachers' psychological well-being differs according to their gender and the school level they work at, it does not differ according to their seniority. School principals exhibit high levels of conscientiousness and extraversion, moderate levels of agreeableness, openness to new experiences, and neuroticism personality traits. The extraversion personality trait of school principals is a significant predictor of teachers' psychological well-being.

**Keywords:** psychological well-being, personality traits, teachers, school principals, five-factor model

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### Introduction

The personality traits that individuals possess influence their interactions with the people around them. Additionally, different personality traits such as self-confidence, sensitivity, personality difficulties, and extraversion are related to their own psychological well-being. For instance, individuals with high levels of social skills are observed to experience higher levels of psychological well-being. This situation is thought to also affect the well-being of the individuals they interact with. This has practical value in the organizational context, particularly in manager-employee relationships. In schools, the personality traits of administrators can influence the nature of their communication with teachers, with whom they are in constant interaction. This situation can impact teachers' well-being, motivation, and performance at school, making research on this topic important due to its potential impact (Jennings, & Greenberg, 2009; Collie, Shapka, Perry, & Martin, 2015; Hascher, & Waber, 2021).

<sup>1</sup>This study is derived from a master's thesis conducted under the supervision of Assoc. Prof. Dr. Tuğba Hoşgörür.

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The presence of an individual in organizational environments with their abilities and traits, and the feeling of being accepted and valued in interactions within the organization, undoubtedly results in their well-being (Collie, 2014). From the organizational perspective, employees' psychological well-being is one of the variables of vital importance for the organization's performance. Teaching is inherently a high-stress profession with frequent instances of burnout (Kun & Gadanecz, 2022). This is one of the challenges that hinder schools from functioning effectively. Granziera, Martin, and Collie (2023) found a negative relationship between teacher burnout and student academic achievement. Various studies have indicated that factors related to teachers' well-being in the organizational environment are influenced by their social interactions with administrators, colleagues, and students (Spilt, Koomen, & Thijs, 2011; Carnevale, 2016; Reckmeyer, 2022; Tsuyuguchi, 2023). Among the parties involved in these interactions, school administrators play a more decisive role, as they are responsible for creating and managing communication processes within the school. Therefore, it is thought that the personality traits of administrators, which define the content and boundaries of their interactions at school, could be related to teachers' well-being.

Parallel to the development of the science of psychology, studies on psychological well-being have become one of the fundamental research areas of this discipline. This concept was first comprehensively addressed in Norman M. Bradburn's (1969) book "The Structure of Psychological Well-Being" and gained importance with Ryff's (1989) model development on psychological well-being. In his work, Bradburn (1969) provided important insights into how the concept of psychological well-being can be approached in a more systematic and scientific manner through his "Affect Balance Scale," which he created to evaluate positive and negative emotions as indicators of life satisfaction and general well-being. Bradburn (1969, p. 224) states that the condition referred to as mental health is actually a state of subjective well-being, equating it to the ancient Greek concept of eudaimonia. He explains that just as there is illness and health in physical well-being, there is happiness and unhappiness in psychological well-being. The term eudaimonia, used in Ancient Greece, is prominently featured in Aristotle's works. Although often used to mean happiness, in Aristotle's works, it is defined as active behaviors based on reason and introspection, involving excellence and virtue (Huta, 2013). Rather than attaining happiness as a result, it emphasizes the process and content of a well-lived life (DeHaan & Ryan, 2014).

The self-determination theory, which began to be studied in the 1970s, adopts an approach to the concept of eudaimonia similar to Aristotle's (Huta, 2013). According to the self-determination theory, the determinants of individuals' actions are their perceived autonomy, competence, and relatedness (Hoşgörür, 2021). Among these, the need for autonomy is particularly emphasized, which involves the individual's perception that they are the determinant of how they should act in response to situations they encounter. Ryan and Deci (2000, p. 75) state that individuals can only feel complete and experience the feeling of well-being or eudaimonia if these three needs are met.

Regarding well-being, Ryff's (1989) study expanded the content of eudaimonia into six dimensions. These six dimensions, which are also the basis of this study, are autonomy, personal growth, environmental mastery, positive relations with others, self-acceptance, and purpose in life. Autonomy refers to individuals' ability to make their own decisions independently, regulate their behavior internally, and evaluate themselves according to self-imposed standards despite societal pressures. Personal growth involves embracing continuous development in life, being open to new experiences, having the desire to realize one's potential, and feeling the progress in oneself and one's actions. Environmental mastery refers to the individual's ability and competence to control and manage complex situations in their environment, effectively leverage opportunities, and create contexts suitable for their personal needs and values. Positive relations with others emphasize the importance of having positive, trustful, and warm relationships with others, showcasing empathy and concern for the well-being of others. Self-acceptance denotes the ability to make positive evaluations about oneself and one's past life, signifying maturity and mental health. Purpose in life reflects the belief that one's life has meaning and a purpose, with mentally healthy individuals being those who progress towards goals they set in life, thereby finding meaning in their existence (Ryff, 1989; Ryff & Keyes, 1995). Research on teachers' psychological well-being shows that their well-being not only affects their quality of work life (Boyalioğlu & Çobanoğlu, 2024) but also positively impacts students' well-being and consequently their learning



outcomes (McCallum et al., 2017). It is believed that teachers' well-being may be related to the personality traits of school principals, who are primarily responsible for the culture and climate of the school's working environment. Therefore, the following sections provide explanations regarding personality traits.

When examining the literature on personality, it is noted that the concept originates from the Latin word "persona." Persona was historically used to refer to the masks worn by actors in their roles. Jung (1966) suggested that, much like masks, the persona is not real but rather a compromise between the individual and society's views on how a person should appear. According to Jung, the persona is "a mask of the collective psyche," playing the role determined by it. He argues that conscious personality is similarly a part of this collective psyche (Jung, 1966, pp. 157-158). According to the American Psychological Association's dictionary of psychology, personality refers to the enduring configuration of characteristics and behavior that an individual constructs to adapt to life. These include major traits, interests, drives, values, abilities, and emotional patterns (APA, n.d.). In this context, personality can be described as the reflection of the attitudes, dispositions, and behaviors individuals exhibit in their interactions with their environment.

Various models have been developed in the literature to explain the development of personality and its components. One such model is the Five-Factor Model of Personality (McCrae & John, 1992), which examines an individual's personality through five independent factors. This model is widely used for assessing personality because it provides a general framework for understanding how differences in personality traits affect people's behaviors, emotions, and thoughts. Due to these characteristics, it is also known in the literature as the "Big Five" (Goldberg, 1981). McCrae and Costa (1997) conducted a cross-cultural study involving six different countries with linguistic and cultural diversity. They found that the model not only works well in describing personality but is also universal. Therefore, the study preferred using this model. The Five-Factor Model of Personality is based on the assumption that individuals can be described by relatively enduring patterns of thoughts, feelings, and behaviors, and these traits can be quantitatively assessed (McCrae & Costa, 2008). This model examines personality traits through a hierarchical structure of five dimensions: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. The explanations for each dimension are provided below.

*Neuroticism* is a dimension that represents the tendency of individuals to experience emotional instability and variability. Individuals with high neuroticism scores are typically anxious, restless, unhappy, easily angered, and more sensitive to negative emotions. In organizations, these individuals may struggle to cope with challenges, making them more likely to leave their jobs. They may exhibit behaviors associated with burnout syndrome or, in more severe cases, self-harm. On the other hand, individuals with low neuroticism scores are generally calmer, emotionally stable, and better at managing stress. In organizations, these individuals tend to have higher job commitment, maintain moderate relationships with other employees, and are characterized by a higher level of subjective well-being (Benet-Martinez & John, 1998; Denissen & Penke, 2008; John, 2021).

*Extraversion* is characterized by high levels of social skills, motivation to engage in social environments, and energy. Individuals who score high in extraversion can express their thoughts and emotions effectively, often taking on leadership roles within groups. These individuals generally have a large circle of friends and prefer careers that involve entrepreneurship. They tend to favor team sports over individual sports and often join social clubs. The opposite end of extraversion is characterized by individuals with low social skills and difficulties in interpersonal relationships (McCrae & Costa, 2008; John, 2021).

*Openness to experience* is characterized by the diversity, depth, and originality of individuals' mental processes and daily life practices. These individuals are not disturbed by disruptions to their routines; rather, they often seek novelty, change, and new experiences. They are highly creative and are continuously engaged in learning and exploration. A low score in openness to experience indicates conservative attitudes, adherence to routines, and an aversion to change (Abu Raya et al., 2023; John, 2021).

*Agreeableness* is considered one of the effective personality traits. These individuals are cooperative, have high empathy skills, and are forgiving. They do not use aggressive language in communication; instead, they have a compassionate approach and are humble. They adopt a conciliatory attitude in interpersonal conflicts. The opposite end of this dimension is characterized by skeptical and confrontational approaches in relationships (Benet-Martinez & John, 1998; Laursen, Pulkkinen, & Adams, 2002; McCrae & Costa, 2008).

*Conscientiousness* refers to individuals who are task-oriented in both their daily and professional lives, adhere to social norms, perform their duties to the best of their ability, keep their promises, and are productive. These individuals have high goals and make long-term plans. They possess strong leadership skills and are well-prepared for potential challenges. A low score in this dimension indicates individuals who do not take their responsibilities seriously, tend to procrastinate on their tasks, and exhibit capricious behaviors in organizational settings (McCrae & Costa, 2008; Roberts et al., 2009).

Various studies using the five-factor personality model have determined that some personality traits are primarily related to the individual's own well-being (Abdullahi, Orji, Rabi, & Kawu, 2020; Asquith, Wang, Quintana, & Abraham, 2022). For instance, Doğan (2013) noted in his study that the two personality traits that significantly predict subjective well-being are extraversion and neuroticism. Sarıcaoğlu's (2011) research on university students showed that students' personality traits are significant predictors of their well-being. Additionally, Eğinli (2009) found in his study that among the top three factors affecting job satisfaction, the work environment, management and supervision practices in the organization, and superior-subordinate relationships are prominent. All three are related to or within the responsibility of the manager. The study by Greenberg, Brown, and Abenavoli (2017) indicated that poor relationships with school principals, deficiencies in principals' leadership skills, and a non-conducive school climate are among the primary stress sources for teachers. The studies by Ozbag (2016) and Günay-Süle and Kırıl (2022) also found that school principals' personality traits predict various leadership styles. This suggests that principals' personality traits influence their behaviors and management styles in the organizational environment. The impact of school management on teachers' well-being is undeniable. The mentioned studies provide clues that the personality traits of school principals may affect the teachers they constantly interact with in the organizational environment, thereby impacting their well-being. Designed to address the need to clarify this issue, this study aims to determine the relationship between school principals' personality traits and teachers' psychological well-being. In line with this aim, the following questions are sought to be answered.

- What are the levels of psychological well-being of teachers?
- Do the levels of psychological well-being of teachers significantly differ based on gender, seniority and the type of school they work at?
- How do teachers evaluate school principals in terms of the five-factor personality traits?
- Are teachers' evaluations of school principals' five-factor personality traits a significant predictor of their psychological well-being?

## **Method**

### **Research Design**

This research is a correlational survey study examining the relationship between school principals' personality traits and teachers' psychological well-being (Cohen, Manion, & Morrison, 2018).

### **Population and Sample**

The population of the study consisted of approximately 650 teachers working in schools in the Dalaman district of Muğla province during the 2023-2024 academic year. The sample of the study includes 405 teachers working at different primary, middle, and high school levels in Dalaman district of Muğla province. Disproportionate cluster sampling technique was used to select the teachers.

Among the teachers in the sample, 190 (46.9%) are male, and 215 (53.1%) are female. The average age of the teachers is 43.22 years ( $SD = 6.61$ ), with ages ranging from 24 to 63. Of the teachers, 64 (15.8%) are single, and 341 (84.2%) are married. The professional seniority of the teachers ranges from 4 to 40 years, with an average of 20.82 years ( $SD = 6.71$ ). All teachers are tenured, with 123 (30.4%) working in primary schools, 137 (33.8%) in middle schools, and 145 (35.8%) in high schools. Teachers from 28 different branches participated in the study, with the highest participation from classroom teachers (26.7%;  $n = 108$ ), followed by mathematics teachers (12.8%;  $n = 52$ ), English teachers (6.9%;  $n = 22$ ), Turkish teachers (5.4%;  $n = 22$ ), and physical education and sports teachers (4.9%;  $n = 20$ ). Finally, the duration of working with their current school principals varies from 1 to 12 years, with an average duration of 5.02 years ( $SD = 2.14$ ).

### Data Collection Tools

The data for this research were collected using the Psychological Well-Being Scale and the Big Five Personality Scale. The Psychological Well-Being Scale (PWBS) was developed by Diener et al. (2010) to measure the psychological well-being levels of teachers and was adapted into Turkish by Telef (2013). The PWBS is an eight-item Likert-type scale ranging from Strongly Disagree (1) to Strongly Agree (7). Higher scores on the scale indicate higher psychological well-being. Telef (2013) examined the language validity, construct validity, and equivalent scale validity of the Turkish adaptation of the PWBS.

Language validity was assessed by administering the scale to the same group in both languages two weeks apart. A very high correlation ( $r = .97$ ) was reported between the total scores of the Turkish adaptation and the original scale. At the item level, correlation values ranged from .76 to .97. Construct validity was examined through both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The EFA showed that the scale had a single-factor structure similar to the original factor structure, explaining 41.94% of the total variance. The factor loadings of the items in the Turkish adaptation of the PWBS ranged from .54 to .76. The CFA results also demonstrated that the single-factor structure of the scale had an acceptable fit with the data. The factor loadings obtained from the CFA for the Turkish adaptation of the PWBS ranged from .43 to .71. The equivalent scale analysis of the Turkish adaptation of the PWBS yielded similar results to the original scale. Reliability findings for the Turkish adaptation of the PWBS showed a Cronbach's alpha internal consistency coefficient of .80 and a test-retest reliability coefficient of .86, calculated two weeks apart. The Cronbach's alpha reliability coefficient calculated for this study was .83, indicating a high level of internal consistency among the items (Yockey, 2023).

To measure teachers' evaluations of their school principals' Big Five personality traits, the Big Five Personality Scale (BFPS) developed by Benet-Martínez and John (1998) and adapted to Turkish by Sümer et al. (2005) was used. This Likert-type scale consists of 44 items, where teachers rated each personality trait on a scale from strongly disagree (1) to strongly agree (5) in terms of how well it describes their school principals. High scores in a specific dimension indicate that the school principals exhibit that personality trait more strongly. The Cronbach's alpha internal consistency coefficients of the scale calculated by Sümer et al. (2005) range from .64 to .77. In this study, the Cronbach's alpha internal consistency coefficients range from .60 to .71.

### Data Analysis

The scales were administered to teachers who volunteered to participate in the study by visiting their schools. Before conducting the inferential analyses, the accuracy of the data, missing values, outliers, multiple regression analysis, Pearson correlation analysis, independent samples t-test, and one-way analysis of variance (ANOVA) assumptions were examined according to the recommendations of measurement and evaluation experts (Can, 2014; George & Mallery, 2020; Tabachnick & Fidell, 2019). To check the accuracy of the data, variables such as gender, level of the educational institution they work at, and length of service were examined along with the minimum and maximum values and frequency distributions of the scale items. The examination showed that all variables and scale items were within the expected value ranges. To detect univariate outliers, the z-score criterion was used (Tabachnick & Fidell, 2019). First, the length of service, PWBS total scores, and standardized z-scores

for openness to experience, neuroticism, conscientiousness, agreeableness, and extraversion total scores were calculated. According to Tabachnick and Fidell (2019), values outside the range of  $\pm 3.29$  are considered outliers. The outlier analysis showed no univariate outliers for the length of service, PWBS total scores, or the total scores for openness to experience, neuroticism, conscientiousness, agreeableness, and extraversion. Multivariate outliers were identified using Mahalanobis distances (Tabachnick & Fidell, 2019). Although data were initially collected from 408 teachers, three multivariate outliers were identified and removed from the dataset. Consequently, the analyses were conducted with data from 405 teachers.

Descriptive statistics were used to present the demographic variables of the teachers and to classify their psychological well-being levels and school principals' Big Five personality traits. The scores from the scales were classified as follows: for the PWBS, a seven-point Likert-type scale, scores of 1.00-2.17 are classified as very low, 2.18-3.35 as low, 3.36-4.53 as medium, 4.54-5.71 as high, and 5.72 and above as very high. For the subdimensions of the Big Five personality traits, scores of 1.00-1.80 are classified as very low, 1.81-2.60 as low, 2.61-3.40 as medium, 3.41-4.20 as high, and 4.21 and above as very high.

An independent samples t-test was used to examine the differences in the total scores of psychological well-being between male and female teachers. A one-way ANOVA was used to examine the differences in psychological well-being scores based on the level of the educational institution where the teachers work. Pearson correlation analysis was conducted to examine the strength and direction of the relationship between the length of service, the school principal's openness to new experiences, neuroticism, conscientiousness, agreeableness, and extraversion total scores, and the teachers' total psychological well-being scores. Pearson correlation analysis was also used to examine the strength and direction of the relationship between the total scores of the school principals' personality traits and the teachers' total psychological well-being scores. Multiple regression analysis was conducted to examine whether the principals' personality traits of openness to new experiences, neuroticism, conscientiousness, agreeableness, and extraversion predict the teachers' levels of psychological well-being.

The assumptions for the independent samples t-test and one-way ANOVA include normality and homogeneity of variances, for Pearson correlation analysis include normality and linearity, and for multiple linear regression analysis include normality, linearity, homoscedasticity, and multicollinearity (Field, 2018; George & Mallery, 2020; Hair et al., 2018; Tabachnick & Fidell, 2019). To examine the normality assumption, skewness and kurtosis values of continuous variables were checked, considering the sample size. As a general rule, skewness and kurtosis values within the  $\pm 2$  range indicate that the data approximates a normal distribution (George & Mallery, 2020). All calculated values for this study were found to be within the  $\pm 2$  range, indicating a near-normal distribution of the data. The homogeneity of variances assumption was checked using Levene's test, and it was determined that this assumption was violated in the one-way ANOVA test comparing psychological well-being across educational levels. Therefore, Welch's F-test results and post-hoc Games-Howell test results were reported for these analyses (George & Mallery, 2020). The linearity assumption was checked using scatterplots of continuous variables, such as age, length of service, length of service with the school principal, openness to new experiences, neuroticism, conscientiousness, agreeableness, extraversion total scores, and teachers' total psychological well-being scores. This assumption was found to be met (Tabachnick & Fidell, 2019). The homoscedasticity assumption for regression analysis was examined using scatterplots of regression residuals and predicted values. It was observed that the points were randomly distributed around the zero point and did not form a funnel shape, indicating that this assumption was met (Tabachnick & Fidell, 2019). Finally, the multicollinearity assumption was checked by examining the VIF and tolerance values. VIF values below 10 and tolerance values above .10 indicate that this assumption is met (Tabachnick & Fidell, 2019). In the conducted regression analysis, tolerance values ranged from .36 to .54, and VIF values ranged from 1.84 to 2.78. These findings indicate that the multicollinearity assumption was met (Tabachnick & Fidell, 2019).

The analyses were reported with effect size estimates as suggested by Cohen (1992). For the independent samples t-test, Cohen's *d* is commonly used as the effect size estimate, while eta squared



( $\eta^2$ ) is used for one-way ANOVA analysis, correlation coefficient ( $r$ ) for Pearson correlation analysis, and the proportion of explained variance ( $R^2$ ) for multiple linear regression analysis. According to the classification proposed by Cohen (1992), an absolute value of  $d$  between .00-.49 indicates a small effect size, .50-.79 indicates a medium effect size, and .80 and above indicates a large effect size. For eta squared ( $\eta^2$ ), values between .00-.05 indicate a small effect size, .06-.13 indicate a medium effect size, and .14 and above indicate a large effect size. For Pearson correlation analysis, absolute correlation coefficient ( $r$ ) values between .00-.29 indicate a small effect size, .30-.49 indicate a medium effect size, and .50 and above indicate a large effect size. Finally, for the proportion of explained variance ( $R^2$ ), values between .00-.12 indicate a small effect size, .13-.25 indicate a medium effect size, and .26 and above indicate a large effect size (Cohen, 1992). A significance level of  $p < .05$  was used for all statistical analyses.

## Findings

In this section of the study, the findings obtained from the analysis of the data collected to determine the relationship between school principals' personality traits and teachers' psychological well-being are presented. According to the findings related to teachers' well-being levels, total scores range from 19 to 56, with an average total score of  $M=43.40$  ( $SD = 7.92$ ). The adjusted mean score of teachers on the psychological well-being scale is 5.43, indicating a high level of psychological well-being. To determine whether teachers' psychological well-being differs by gender, an independent samples t-test was conducted. The results showed a significant difference in total mean scores by gender [ $t(403) = -2.20$ ,  $p < .05$ ,  $d = -.22$ ]. This difference has a small effect size. Accordingly, the mean total scores of female teachers ( $M=44.21$ ,  $SD=7.66$ ) are significantly higher than those of male teachers ( $M=42.49$ ,  $SD=8.12$ ). A one-way ANOVA test was conducted to compare the differences in teachers' psychological well-being by the educational level at which they work. The results indicated a significant difference in the total mean scores of psychological well-being by educational level [Welch  $F(2, 265.65) = 11.26$ ,  $p < .001$ ,  $\eta^2 = .05$ ]. This difference has a small effect size. Post hoc Games-Howell tests were conducted to identify which educational levels had differing mean scores. The results showed that teachers working in high schools ( $M=41.10$ ,  $SD=7.45$ ) had significantly lower mean total scores of psychological well-being compared to teachers working in primary schools ( $M=43.89$ ,  $SD=6.89$ ) and secondary schools ( $M=45.40$ ,  $SD=8.66$ ). A Pearson correlation analysis was conducted to examine the relationship between teachers' years of professional experience and their psychological well-being. The results showed no significant relationship between teachers' years of service and their psychological well-being scores ( $r = .04$ ,  $p > .05$ ). Based on these findings, teachers' psychological well-being significantly differs only by gender and the educational level at which they work.

From the comparison of adjusted means, it is observed that teachers evaluate school principals as having high levels of conscientiousness ( $M=3.46$ ) and extraversion ( $M=3.43$ ). Both of these personality traits are displayed at a high level. Additionally, teachers indicate that school principals exhibit agreeableness ( $M=3.33$ ), openness to new experiences ( $M=3.12$ ), and neuroticism ( $M=2.68$ ) in decreasing order, with these three traits being displayed at a moderate level.

To determine the relationship between school principals' Big Five personality traits and teachers' well-being levels, a multiple regression analysis was conducted. The results indicate that school principals' scores in extraversion ( $r = .27$ ,  $p < .001$ ), agreeableness ( $r = .24$ ,  $p < .001$ ), conscientiousness ( $r = .20$ ,  $p < .001$ ), and openness to new experiences ( $r = .15$ ,  $p < .01$ ) are positively correlated with teachers' psychological well-being scores at a low level. Conversely, school principals' neuroticism scores ( $r = -.20$ ,  $p < .001$ ) are negatively correlated with teachers' psychological well-being scores at a low level. Furthermore, the model created to predict teachers' psychological well-being levels based on school principals' Big Five personality traits is found to be significant [ $F(5, 399) = 7.46$ ,  $p < .001$ ,  $\Delta R^2 = .09$ ]. This model explains approximately 9% of the variance in teachers' psychological well-being scores, indicating a low effect size. Among the Big Five personality traits, only school principals' extraversion [ $\beta = .20$ ,  $t(399) = 3.22$ ,  $p < .001$ ] is a significant predictor of teachers' psychological well-being total scores. Other traits, such as agreeableness [ $\beta = .10$ ,  $t(399) = 1.29$ ,  $p > .05$ ], conscientiousness [ $\beta = .04$ ,  $t(399) = .55$ ,  $p > .05$ ], neuroticism [ $\beta = -.07$ ,  $t(399) = -1.04$ ,  $p > .05$ ], and openness to new experiences [ $\beta = -.09$ ,  $t(399) = -1.33$ ,  $p > .05$ ], are not significant predictors. In other words, in this

sample, teachers who perceive their school principals as extraverted have higher levels of psychological well-being. However, the other Big Five personality traits of school principals are not significant predictors of teachers' psychological well-being.

### **Conclusion, Discussion and Recommendations**

This study examined the relationship between school principals' personality traits and teachers' psychological well-being. In line with the research objectives, the study first presented findings on teachers' psychological well-being and how it varies according to various demographic variables. Then, it discussed teachers' perceptions of the personality traits of their school principals. Finally, a multiple regression analysis was conducted to determine the relationship between teachers' psychological well-being and school principals' personality traits. The following paragraphs discuss the results of these analyses and provide suggestions for future research on identified problem areas.

The findings regarding teachers' psychological well-being indicate that teachers generally have a high level of psychological well-being. These results are consistent with findings from other studies by Yıldız and Aslan (2023) and Aydoğan (2019). Teaching is a profession that directly involves human interactions and requires high levels of compassion and social skills beyond its pedagogical aspects (Fullan, 2007). The trust that society places in teachers and the perception of teaching as a highly esteemed profession compared to others may positively influence the psychological well-being of teachers. Additionally, the positive feedback teachers receive from their efforts and relationships with students and other stakeholders in the school environment may contribute positively to their psychological well-being. However, it is also possible that the high levels of psychological well-being found in these studies are influenced by the geographic characteristics and living conditions of the regions where the studies were conducted. The region where this study was conducted has a temperate climate, a relatively small population, and relatively good living conditions. To avoid misleading conclusions, it would be beneficial to extend the study to include regions with more challenging living conditions. Furthermore, it is necessary to periodically assess psychological well-being levels of teachers, considering changes in social, economic, health, and other conditions. It should be noted that this measurement tool does not allow for inferences about the causes of psychological well-being. Therefore, if negative findings regarding psychological well-being are obtained, there will be a need to develop different data collection tools to identify the underlying causes.

When comparing teachers' psychological well-being based on gender, it was observed that female teachers had significantly higher levels of psychological well-being than their male counterparts. Hoşgörür and Yorulmaz (2015) found that women exhibit more behaviors related to managing, directing, and expressing emotions as required by the profession compared to male teachers. The perception of teaching as a more feminine profession by society, along with women continuing their nurturing instincts in the school environment and viewing the school as a safe space, are considered potential reasons for this difference. This finding aligns with similar results found in the literature (Aydoğan, 2019; Aslan & Erözyürek, 2021; Doğan & Aslan, 2022).

A significant difference was found in the overall psychological well-being scores of teachers based on the educational level at which they work. The analyses showed that high school teachers have significantly lower levels of psychological well-being compared to their counterparts in elementary and middle schools. This discrepancy is thought to be related to the student profile at the high school level. Yanardağ and Dikmen (2020) found that high school teachers experience significantly higher levels of social stress due to students compared to teachers working in elementary and middle schools. Additionally, high school students do not share the relatively homogeneous characteristics of students in elementary and middle schools, which are often influenced by address-based enrollment systems. The age range of high school students, coinciding with the more pronounced effects of adolescence, as well as the heterogeneous student profile and university entrance exam anxiety, may make teaching at these schools more challenging.



No significant relationship was found between teachers' years of service and their psychological well-being scores. These results are consistent with the study by Aslan and Erözyürek (2021). However, the study by Aydođan (2019) shows that teachers with 1-5 years of experience have higher levels of psychological well-being compared to those with 6-10 and 16-20 years of experience. The differences in results may be attributed to the region from which the sample was taken or the distribution of years of service within the sample. In this study, the average years of service for teachers is approximately 20 years, while Aydođan's (2019) study includes about half of the sample with 1-5 years of experience.

The results concerning teachers' perceptions of school principals' personality traits indicate that teachers view principals as having high levels of conscientiousness and extraversion. Conversely, teachers perceive neuroticism as the trait least possessed by school principals, while they assess principals as having moderate levels of agreeableness and openness to experience. These findings are consistent with the results of Özdemir et al. (2019). In contrast, Balođu's (2016) study, which evaluated the personality traits of school principals as assessed by their colleagues, found that principals exhibited the highest levels of conscientiousness but the lowest levels of extraversion. Conscientiousness and extraversion are associated with behaviors such as task focus, goal orientation, effective impulse control, high communication and self-expression skills, dominance, energy, and sociability (Benet-Martinez & John, 1998). Özdemir et al. (2019) also found a relationship between principals' administrative self-efficacy perceptions and their personality traits, with principals who have high levels of conscientiousness being more confident in their administrative efficacy. These traits are expected of effective school administrators (Aslanargun, 2015; Scallon, Bristol, & Esboldt, 2023).

However, an important aspect not to overlook in the research findings is that neuroticism is ranked the lowest among the personality traits exhibited by school principals, relatively speaking. The results indicate that this trait is displayed at a moderate level. Neuroticism refers to difficulties in managing emotions, anxiety, depression, irritability, problems in social relationships, and an unstable personality structure. Consequently, neuroticism is a personality trait that is generally deemed unacceptable for school principals who are responsible for overseeing all processes within the school. In this context, the results are concerning. Indeed, Özkul, Demirtaş, and Üstüner (2023) found that out of 66 school principals they studied, 40 reported experiencing various issues related to interpersonal relationships, reflecting weaknesses in their emotional management. Based on these results, it is suggested that employing high-quality assessment tools to evaluate personality traits could be functional in the school administrator selection process. This approach could ensure that individuals with the potential to be more effective leaders are considered for the role.

Finally, in the study, a multiple regression analysis was conducted to assess whether teachers' perceptions of the personality traits of school principals are a significant predictor of their psychological well-being. The analysis revealed that the personality traits of school principals—extraversion, agreeableness, conscientiousness, and openness to experience—were positively and weakly related to teachers' psychological well-being, while neuroticism was negatively and weakly related to teachers' psychological well-being. Among these traits, only extraversion was found to be a significant predictor of teachers' psychological well-being. Extraversion is associated with being energetic, social, and assertive. Judge et al. (2002) found in their meta-analysis of leadership research that extraversion had the most consistent and strongest correlation with leadership, indicating that it is a crucial trait for effective leaders. Additionally, research shows that school principals' extraversion trait positively affects teachers' emotional well-being and has a significant impact on school culture (Anderson, Spataro, & Flynn, 2008; Blair, 2024). These results suggest that efforts to develop these traits in school administrators could have a positive effect on the effectiveness of schools.

In this study, although teachers' evaluations of school principals' agreeableness, conscientiousness, and openness to experience personality traits were found to be correlated in the correlation analysis, they were not significant predictors in the regression analysis. These findings suggest that when teachers evaluate school principals' agreeableness, conscientiousness, and openness to experience traits together with extraversion, their impact on psychological well-being levels is limited. Repeating these findings in different school types and regions is crucial for the generalizability of the results. Moreover, longitudinal studies are needed to examine the effects of school principals' personality traits on

teachers' psychological well-being. Including school principals' self-assessments in addition to teachers' perceptions could enhance the validity of the findings. Furthermore, examining other organizational and individual variables influencing teachers' psychological well-being could contribute to a more comprehensive understanding of the subject.

**Research and Publication Ethics** All rules specified in the Higher Education Institutions Scientific Research and Publication Ethics Directive were followed in this study. None of the actions mentioned in the second section titled "Actions Against Scientific Research and Publication Ethics" of the directive were carried out.

### Disclosure Statements

1. Authors' contribution rate statement: First Author 50%, Second Author 50%
2. No conflict of interest has been declared by the authors.

### CRedit Author Contribution Statement

Mehmet YILMAZ: Literature review, research design, data collection, data analysis, results and discussion

Tuğba HOŞGÖRÜR: Literature review, research design and management, data analysis, results and discussion

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## The Mediating Role of Psychological Well-Being in the Relationship Between Teachers' Career Burnout and Couple Burnout<sup>1</sup>

Hazal KARAKUŞ<sup>2</sup>, Burhan ÇAPRI<sup>3</sup>

### Abstract

This study investigated the relationship between the career burnout, couple burnout and psychological well-being scores of teachers. The study further investigated whether psychological well-being have mediating role on the relationship between career burnout and couple burnout. The data of the study were collected from 830 teachers. The sample consisted of 349 male and 481 female who are married or in romantic relationship in the metropolitan district of Adana, Turkey. The data were collected by using "Personal Information Form", "Burnout Scale-Short Version", "Couple Burnout Scale-Short Version", "Psychological Well-Being Scale". The correlation analysis was used to determine the relationships between career burnout, couple burnout and psychological well-being. Then, the structural equality model was used to analyze whether teachers' psychological well-being had a mediating role between career and couple burnout. The study showed that a significant positive relationship was observed between career burnout and couple burnout. Moreover, psychological well-being was negatively correlated with career burnout and couple burnout. Finally, the study concluded that psychological well-being plays a partial role in the relationship between teachers' couples and career burnout.

**Keywords:** Career burnout, couple burnout, psychological well-being, teacher.

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### Introduction

The nature of work, working conditions and opportunities offered for an individual to develop him/herself professionally and the excess of occupational stress affect his/her family life, individual happiness and satisfaction with his/her life even though she/he has chosen a profession that is suitable for their ability, interest and values (Kuiper, Martin, & Dance, 1992). Considering the place that business and professional life occupies in a person's life the nature of the individual's occupation, working conditions, opportunities offered for the individual to develop him/herself professionally and the excess of occupational stress factors even if she/he has chosen a profession that is suitable for the person's ability, interest and values, affect his/her family life, happiness and satisfaction with his/her life

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(Kuiper, Martin, & Dance, 1992). Teachers are one of the occupational groups with a high risk of career burnout due to the intense factors that cause stress in working life. By considering the effects of teachers on society, it can be said that the problems they experience in their professional lives and marriages and consequences of these problems would indirectly affect society. Teaching is one of the occupational groups with a high risk of career burnout due to the intense factors that cause stress in working life. Working under negative conditions and pressure negatively affects the performance of teachers in the work environment, while also causing deterioration in the person's health (Akten, 2007; Yeşiltepe, 2011). To talk about a qualified educational environment, there must first be teachers who are devoted, patient, open to constant change and loving. Teachers who are psychologically stable and healthy will also help students positively, affect their psychology and increase the quality of education (Yeşiltepe, 2011). In connection with this, it is important to determine the levels of career burnout, couple burnout and psychological well-being in teachers. In particular, it can be said that reducing the levels of career burnout and couple burnout in teachers and increasing the psychological well-being levels by controlling the reasons for their emergence have a very important place in increasing the quality of education.

Looking at the literature on the concept of burnout, Maslach's career burnout model (Maslach & Jackson, 1981) and Pines' Psychoanalytic-Existential Model (Pines & Aronson, 1988) have been the most researched subjects, respectively. In Maslach's burnout model, he explained professional burnout as a syndrome seen in professionals that require face-to-face interaction with people. Symptoms of this syndrome can be listed as physical exhaustion, prolonged fatigue, helplessness, hopelessness and a sense of uselessness. According to this model, professional burnout comprises of emotional exhaustion, depersonalization and decreased personal achievement dimensions (Maslach & Jackson, 1981). In the Psychoanalytic-Existential Career burnout Model put forward by Pines and Aronson, career burnout is described as "the physical, emotional and mental weariness caused by environments that constantly consume individuals emotionally". According to the psychoanalytic-existential perspective, the reason for burnout is that people expect to acquire the existential meaning in their work that they cannot reach in their lives. When this expectation is not met, people start to experience burnout by falling into despair. According to this approach, career choice is explained by unconscious processes shaped by the individual's negative childhood experiences and unresolved family interaction. It is possible that career burnout, which has consequences that directly affect the work life of the individual, also affects marriage and family life, which are other important parts of the individual's life (Lingard, 2004). Thus, Pines' Psychoanalytic-Existential Model is best suited to adapt for the area of spouse/marriage. The reason why Pines' Psychoanalytic-Existential Model has an important place in the literature is that burnout studies conducted only on business life have been adapted by Pines to another area of life such as spouse/marriage (Çapri, 2013).

According to the psychoanalytic approach, it is thought that the negative childhood experiences of individual will increase the possibility of establishing negative interpersonal relationships in the future, and the unconscious determinants of the individual's choice of job and spouse will be built on childhood traumas. Individuals make their choice of profession and spouse in order to meet some of their needs that they are not able to satisfy during their childhood and to give an existential meaning to their childhood experiences (Pines, 1996, 2000; Pines and Yanai, 2001). In other words, they try to meet their unfulfilled needs with their work or their marriage life. If the individual finds his/her job or relationship meaningful, or if he/she can meet these needs and make the right choices in his/her job or relationship, the probability of experiencing burnout decreases. Pines (2004) states that there is high expectation and hope in the selection process of the individual, but disappointments, failure to meet emotional expectations or loss of the meaning of the relationship will cause couple burnout in individuals.

Couple burnout is a type of burnout that occurs when various marriage expectations such as couples caring for each other, mutual love, trust in each other, fulfilling parenting roles, sharing responsibilities and worldview do not match (Slosarz, 2002). People experiencing couple burnout also experience physical, mental and emotional fatigue, and if these are not prevented, various consequences may occur, including divorce (Pines, 1996). Physical fatigue, which is the result of couple burnout, is the

dimension of fatigue that manifests itself with a state of chronic fatigue and a constant desire to sleep, which is different from the fatigue caused by doing any physical work (Kızıldağ, 2015). Mental fatigue, on the other hand, expresses a negative attitude towards the relationship, especially the spouse, and a low sense of self (Çapri, 2008). Emotional fatigue refers to the fact that those experiencing burnout feel exhausted, disappointed, irritable, and do not want to do anything and think about something else. In this case, spouses often experience depression symptoms such as chronic unhappiness, seeing life as empty and meaningless, and difficulty in fulfilling daily routines (Can, 2013). In other words, according to Pines' Psychoanalytic-Existential Model, individuals who experience couple burnout experience deterioration in their physical and psychological health.

On the other hand, psychological well-being is a concept that includes the ability of the individual to have a positive perception of himself/herself, to be satisfied with himself/herself even when he/she is aware of his/her limitations, to establish safe and sincere relationships with other individuals, to shape the environmental conditions to meet his/her personal needs, to act independently, to have the meaningfulness and purpose of his/her life, to be aware of one's individual potential and to make efforts to develop this potential (Keyes, Shmotkin ve Ryff, 2002). Psychological well-being is the subjective perception of an individual's psychological health and quality of life, which is evaluated in the cognitive and emotional domain (Lubin & Whitlock, 2004). In addition to subjective happiness, psychological well-being is also related to the individual's personal view of realizing his/her own potential and how he/she lives (Hefferon & Boniwell, 2014; Onraet, Hiel, Dhont, 2013).

When the literature on the concept of career burnout is examined, it is seen that it has a positive correlation with couple burnout (Çapri, 2008; Kızıldağ, 2015; Laes & Laes, 2001; Pines et al., 2000; Nunes, Pines, Rodrigue, & Utasi, 2000). It is known that the concept of psychological well-being, which has been investigated frequently in recent years, has a negative correlation with career burnout (Burke, Koyuncu, & Fiksenbaum, 2010; Greenglass, Burke, & Fiksenbaum, 2001). In the above studies, it was observed that there was a positive relationship between career burnout and couple burnout, and a negative relationship between Career burnout and psychological well-being, and this information led us to think that these two concepts, which are known to be associated with career burnout, are related to each other.

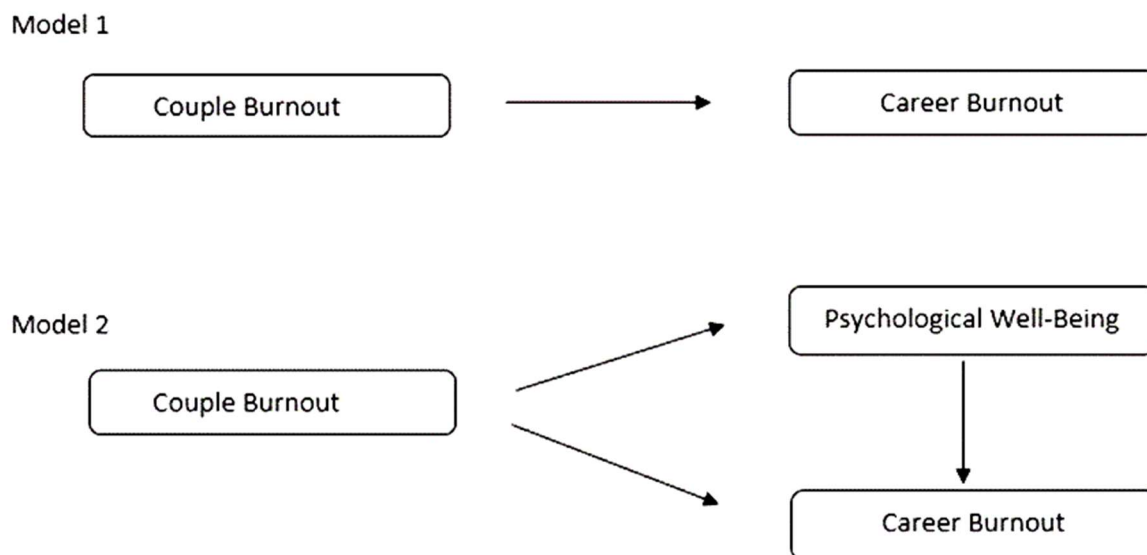
While the relationship between career burnout and couple burnout is known, creating a mediation model including the concept of psychological well-being will make important contributions to the literature in terms of the direct-indirect effects of these three concepts on each other and their predictive power, as well as in strengthening the generalizability of this model, which has not been tested in Turkish culture before. In addition, in the light of the results to be obtained from the research, the development of their psychological well-being can be supported by gaining insights on career and couple burnout in teachers. In addition, testing psychological well-being, which is a protective factor for career and couple burnout, which is one of the risk factors in teachers' lives, will be able to provide an important data for intervention studies as well as protective and preventive mental health services for teachers by mental health professionals such as psychological counselors, psychologists and psychiatrists. In the light of all these explanations, the aim of this study is to examine whether psychological well-being has a mediating role in the relationship between teachers' career burnout and couple burnout.

### **Method**

This research is a descriptive study in relational screening model, which aims to examine whether psychological well-being has a mediating role in the relationship between teachers' career burnout and couple burnout.

The research model is presented in Figure 1 below.

**Figure 1**  
*Research Model*



As seen in Figure 1 above, the relationship between career burnout and couple burnout was examined in Model 1. In Model 2, the mediation of psychological well-being in the relationship between career burnout and couple burnout was examined.

### **Study Group**

In order to determine the sample group of the research, the number of married teachers working in Adana Provincial Directorate of National Education was asked. However, the sample could not be determined due to the answer that they did not have such statistical data. Thus, it was decided to form a study group consisting of teachers determined by the appropriate sampling method, since it would be an easily accessible and economical method for the researchers. The study group consisted of 349 (42.0%) males and 481 (58.0%) females, who worked at different levels in the central districts of Adana in 2018, agreed to participate in the research voluntarily, were married or had a romantic relationship during research. Study group consists of 830 teachers in total. Of the participants, 158 (19.0%) were primary school teachers, 628 (75.7%) were branch teachers, and 44 (5.3%) were kindergarten teachers. 250 (30.1%) of the teachers in the study group have 1-10 years, 312 (37.6%) have 11-20 years, 215 (25.9%) have 21-30 years and 53 (6.4%) have 31 years or more working experience. 346 (41.7%) participants have relationship duration of 1-10 years, 295 (35.5%) have between 11-20 years, 189 (22.8%) have 21 years and above. 141 (17.0%) participants don't have children. There are 192 (23.1%) participants with 1 child, 409 (49.3%) with 2 children, and 88 (10.6%) participants with 3 or more children.

### **Data collection tools**

In this study, "personal information form" was used to determine teachers' sociodemographic characteristics, "Burnout Scale-Short Form" was used to determine career burnout levels, "Couple-Burnout Scale-Short Form" was used to determine couple burnout levels, and "Psychological Well-Being" was used to determine psychological well-being scale". Detailed information about the scales used in this study is given below.

### ***Personal Information Form***

In the study, a Personal Information Form (PIF) consisting of 7 questions and created by the researcher, was used to determine the sociodemographic characteristics of the teachers participating in the study. With these questions, it was aimed to determine teachers' perception of gender, length of service, branch, marriage-relationship duration, number of children, and social support for work and marriage.

### ***Burnout Scale- Short Form (BS-SF)***

The scale was adapted from Pines and Aranson's (1988) Burnout Scale consisting of 21 items. With this adaptation, the scale was transformed into a 10-item form by Pines (2005) in order to facilitate its use. BS-SF is based on the statements of the interviewees on a seven-grade scale (1- Never and 7- Always) to measure the career burnout level of individuals. It was observed that the internal consistency coefficients of the scale, which was calculated with the data obtained from different ethnic origins, professions and student groups, ranged from .85 to .92. The validity and reliability study of the Turkish version of the scale was carried out by Çapri (2013). The test-retest reliability coefficient, which was carried out with 4-weeks apart by Çapri (2013), was reported as .88 and the internal consistency reliability coefficient as .91. The Cronbach alpha internal consistency coefficient obtained from the data of this study was found to be .89.

### ***Couple Burnout Scale-Short Form (CBS-SF)***

In order to facilitate the application of Pines' (1996) Couple-Burnout Scale, which consists of 21 items, a short 10-item form was developed from this scale. This measuring tool was developed by Pines, Neal, Hammer and Icekson in 2011. CBS-SF, which is the adapted version of Pines's (2005) 10-item BS-SF for spousal relations (such as marriage, dating, engagement and dating) differs from this measurement tool. The main point where CBS-SF differs from this measurement tool is that the word "People" in the phrase "Disappointed with People" in the 2nd item of the scale is replaced by the words "Spouse/Partner". CBS-SF is a seven-point scale used to measure the burnout level of a person's partners or relationships in all types of relationships (married, engaged, dating, etc.). The internal consistency coefficients of the scale calculated with the data obtained from married individuals were found to be .94 for married women and .95 for married men. The validity and reliability study of the Turkish adaptation of the scale was carried out by Çapri (2013). The test-retest reliability coefficient, which was performed with 4-week apart, was revealed as .90 and the internal consistency reliability coefficient as .91 by Çapri (2013). The Cronbach alpha internal consistency coefficient obtained from this study was found to be .93.

### ***Psychological Well-Being Scale (PWBS)***

The Psychological Well-Being Scale (PWBS), developed by Diener, Scollon, and Lucas (2009), consists of 8 items. The Turkish validity-reliability study and adaptation of the scale was done by Telef (2011). At the end of the explanatory factor analysis, it was concluded that the total explained variance was 42%, and the factor loadings of the scale items were calculated between .54 and .76. In confirmatory factor analysis, the fit index values were found to be RMSEA= 0.08, SRMR= 0.04, GFI= 0.96, NFI= 0.94, RFI= 0.92, CFI= 0.95, and IFI= 0.95. The Cronbach alpha internal consistency coefficient obtained in the reliability study of the scale was calculated as .80. As a result of the test-retest performed by Telef, it was observed that there was a high level, positive and significant relationship between the two applications applied with an interval of 2 weeks ( $r= 0.86, p<.01$ ). It was determined that the item-total correlations of the Psychological Well-Being Scale varied between .41 and .63, and the t-values were significant ( $p<.001$ ). Scoring is made between 1-7 on the scale. Therefore, the lowest score that can be obtained from the scale is 8, and the highest score is 56. The median score is 32. A high score from the scale indicates that the person has psychological strength. The Cronbach alpha internal consistency coefficient obtained from the data within the scope of this study was found to be .88.

### **Process**

Data collecting tools used in obtaining the research data were applied by the researcher/s after the teachers who participated in the study were informed about the purpose of the research. Further, he



principles of voluntariness and confidentiality in participating in the study were explained. During the implementation process, the aim of the research and the basic instructions regarding the application of the scales were explained to all teachers in a standard way. The application was made collectively during the lunch break of the teachers in the school environment.

### Data Analysis

Before analyzing the data, assumptions such as sample size, normality, linearity, multicollinearity, missing values, extreme values should be tested for multivariate statistical studies (Cokluk, Şekercioğlu, & Büyüköztürk, 2014). First, the missing values were determined by checking the data entries, and approximate values were assigned for the measurements with less than 5% data loss in the data set. Boxplots were created and no extreme values were found in the data set. Mahalanobis distance was calculated for multidirectional extreme values, Mahalanobis value determined for each subject was compared with the critical chi-square value, and no data could be found above the chi-square value calculated in the data set. The kurtosis and skewness coefficients were calculated for univariate normality, and the coefficients obtained showed that the distribution did not deviate excessively from the normal. In addition, when the histogram, steam-leaf, boxplot and normal q-q plot graphs are examined, it is seen that the distribution of the data set is normal. The variance increase factor (VIF) and tolerance values were calculated to examine multicollinearity, which is the other assumption of multivariate statistical analyses. When the variables of the study were examined, it was concluded that there was no multicollinearity problem between the variables, since the VIF value was less than 10 and the tolerance value was greater than .10 (Cokluk et al., 2014). IBM SPSS Statistics 22 and Lisrel 8.80 were used for the data analysis. For the study, Pearson product-moment correlation coefficient was calculated in order to determine whether there is a significant relationship between teachers' career burnout, couple burnout and psychological well-being scores. Path analyses were used to examine the mediating role of psychological well-being scores in the relationship between teachers' career burnout and couple burnout scores.

### Results

This section presents the findings that are explained by two models used in the study. In the first model, the findings of the relationship between career burnout and couple burnout are included. In the second model, the findings on the mediating role of psychological well-being in the relationship between career burnout and couple burnout are presented.

#### Findings on descriptive and correlation values of career burnout, couple burnout, and psychological well-being

In this section, the results of the study were presented to show the relationship between teachers' career burnout, couple burnout and psychological well-being scores (see Table 1 below). Correlation analysis was carried out to determine the relationship between teachers' career burnout, couple burnout and psychological well-being scores, and the results are presented in Table 1 below.

**Table 1**

*Results of Correlation Analysis Regarding Relationships Between Teachers' Career burnout, Couple burnout and Psychological Well-Being Scores*

Variables	1.	2.	3.
<b>1.Total Career burnout</b>	-		
<b>2.Total Couple Burnout</b>	.54**	-	
<b>3. Total Psychological Well-Being</b>	-.30**	-.33**	-

p<.01

By examining Table 1, it is seen that there are statistically significant relationships between career burnout and couple burnout and psychological well-being scores. Moreover, there was a moderately significant positive correlation between career burnout and couple burnout ( $r=.54$   $p<.01$ ). On the other hand, it was observed that there were moderately significant negative correlations between career burnout and psychological well-being scores ( $r=-.30$   $p<.01$ ) and couple burnout and psychological well-



being scores ( $r=-.33$   $p<.01$ ).

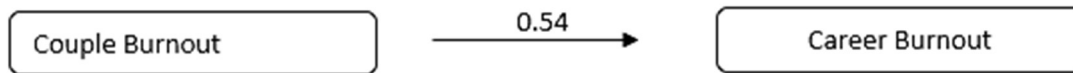
**Model 1: Examining the relationship between career burnout and couple burnout**

Path analysis results of Model 1 and Model 2, which were designed in line with the purpose of the research, are presented in Figure 2 and Figure 3 below.

In this study, the method suggested by Baron and Kenny (1986) was used to examine whether psychological well-being has a mediating role in the relationship between career burnout and couple burnout. According to the researchers, one of the criteria required for mediation analysis is a significant relationship between dependent and independent variables. In order to test Model 2, Model 1 was tested first and is presented in Figure 2.

**Figure 2**

*Test Results of Couple Burnout as a Predictor of Career Burnout*



When the fit indices of the model created in Figure 2 were examined, it is seen that  $\chi^2=0$ . The fact that  $\chi^2$  is 0 indicates that there is no difference between the expected and observed covariance matrices and represents the observed cross-table perfectly (Cokluk, Şekercioğlu, & Büyüköztürk, 2014). In addition to the fit indices for the verification of the structural model, t values were also examined as criteria. The t values and standardized  $\beta$  and standard error values for Figure 2 are given in Table 2.

**Table 2**

*Path coefficients for Figure 2*

Path	Standardize $\beta$	Sh	t
Couple burnout → Career burnout	0.54	0.71	18.43

\* $p<.01$

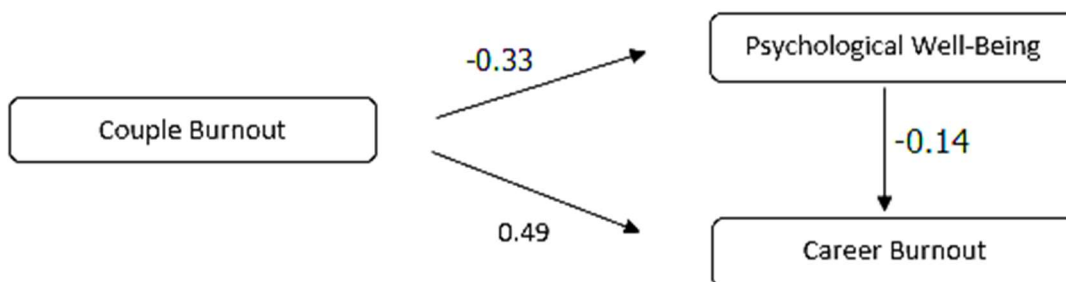
When the path coefficients for Figure 2 were examined, it is seen that couple burnout positively predicts career burnout ( $\beta=.54$   $t=18.43$ ;  $p<.01$ ).

**Model 2: Examining the mediating role of psychological well-being in the relationship between career burnout and couple burnout**

Whether psychological well-being has a mediating role in the relationship between career burnout and couple burnout was tested by path analysis. The model established based on this is given in Figure 3.

**Figure 3**

*Test Results Regarding the Mediator Role of Psychological Well-Being in the Relationship Between Career burnout and Couple burnout*



When the fit indices of the model created in Figure 3 were examined, it is seen that the model was

confirmed by showing a perfect fit ( $\chi^2=0$ ,  $df = 0$ ). In addition to the fit indices for the verification of the structural model, t values were also examined as criteria. The t values and standardized  $\beta$  and standard error values for Figure 3 are given in Table 3.

**Table 3**

*Path coefficients for Figure 3*

Path	Estimates	Standardized $\beta$	t
<b>Couple burnout → Psychological Well-Being</b>	-2.25	-0.33	-9.93
<b>Couple burnout → Career burnout</b>	0.49	0.49	16.15
<b>Psychological Well-Being → Career burnout</b>	-0.02	-0.14	-4.56

\* $p < .01$

When the path coefficients for Figure 3 were examined, it is seen that couple burnout negatively predicts psychological well-being ( $\beta = -0.33$ ,  $t = -9.93$ ;  $p < .01$ ). It is seen that couple burnout positively predicts career burnout ( $\beta = 0.49$ ,  $t = 16.15$ ;  $p < .01$ ) and there was a difference of .04 points in this relationship after the mediator variable was included in the analysis. In order to talk about the mediation effect, when the mediating variable is included in the relationship between the independent variable and the dependent variable, full mediation should be seen as a result of the relationship being meaningless or partial mediation as a result of a decrease in the relationship (Gürbüz & Şahin, 2018). Accordingly, it can be said that psychological well-being has a partial mediating role in the relationship between career burnout and couple burnout.

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### Discussion, Conclusion and Recommendations

This study examined the mediating role of psychological well-being in the relationship between teachers' career burnout and couple burnout by using path analysis. The results showed that there is a positive and significant relationship between career burnout and couple burnout, a significant negative relationship between career burnout with psychological well-being, and a negative significant relationship between couple burnout and psychological well-being. Furthermore, the study displayed that the teachers' psychological well-being has a partial mediating role between career and couple burnout.

The primary finding of the study is that there is a statistically significant positive correlation between teachers' career burnout levels and couple burnout levels. It has been that this finding supports the studies in the literature (Çapri, 2008; Danner-Vlaardingerbroek, Kluwer, Van Steenberg, & Van der Lippe, 2000; 2013; Nunes et al., 2000; Kızıldağ, 2015; Pines et al., 2000; Pines et al., 2011; Utasi, 2000) that show a positive relationship between occupational burnout and spouse burnout and supports the findings that these two concepts affect each other. The strong relationship between these two concepts can be explained by the fact that according to Pines' psychoanalytic-existential perspective (Pines, 2000), people's choice of job and spouse is made to heal the same childhood traumas and to satisfy their unfulfilled childhood needs. Based on this view, the fact that people have similar disappointments in line with the same expectations in their work and family life may cause them to experience burnout in both their work and family lives. In addition, according to Pines (1996), career burnout and couple burnout can develop simultaneously and affect each other. In other words, the burnout that occurs in the work life might affect the marriage life or the burnout experienced in the marriage might affect the occupational life. In this study conducted with teachers, the relationship between the participants' career burnout levels and couple burnout levels is thought to be a proof that people have experienced burnout simultaneously in their professional and marital lives in connection with their inability to find an existential meaning in their lives. It is also thought that burnout, which

started in one area of human life, spreads to other areas as well. In this context, the results of this research point to the existence of this transition and diffusion process between career burnout and couple burnout and burnout that started in one area could spread to another area. At the same time, with research results pointing to the existence of this transition and diffusion process between career and couple burnout (Çapri, 2008, 2013; Demerouti, Bakker, & Schaufeli, 2005; Bakker, Demerouti, & Schaufeli, 2005; Kızıldağ, 2015; Pines et al., 2011). It can also be said that the results are like previous studies and that it is a proof for the existence of the relationship between Pines' psychoanalytic-existential career burnout and couple burnout models in terms of conceptual, philosophical and theoretical aspects.

In this study, it was also determined that there was a statistically significant negative moderate relationship between teachers' career burnout and psychological well-being. This finding is in line with the results of previous studies in the literature (Burke, Koyuncu, & Fiksenbaum, 2010; Demir, 2018; Greenglass, Burke, & Fiksenbaum, 2001) that there is a negative relationship between career burnout and psychological well-being levels. It can be thought that it is an expected result that the psychological well-being level of the individual is negatively affected by the emergence of physical and mental problems because of career burnout. Another subject examined in the study was whether there is a relationship between teachers' couple burnout and psychological well-being levels. As a result of the study, it was determined that there was a statistically significant and negative moderate relationship between teachers' couple burnout and psychological well-being levels. In the literature review, no study was found that examined this relationship before. However, it is known that there is a positive relationship between career burnout and couple burnout, and the scores of these concepts are identical in studies (Çapri, 2008; Danner-Vlaardingerbroek, Kluwer, Van Steenbergen ve Van der Lippe, Gonzalez, 2000; 2013; Nunes ve diğerleri, 2000; Kızıldağ, 2015; Pines ve diğerleri, 2000; Pines ve diğerleri, 2011; Utasi, 2000) on these two concepts. In addition, knowing that there is a negative relationship between career burnout and psychological well-being (Burke, Koyuncu, & Fiksenbaum, 2010; Demir, 2018; Greenglass, Burke, & Fiksenbaum, 2001) made researchers think that there may be a negative relationship between couple burnout and psychological well-being. Therefore, it can be said that the findings of the study support this prediction.

The result that has a negative relationship between psychological well-being and both career burnout and couple burnout can be explained by Pines' Psychoanalytic Existential Burnout Model. At this point, considering that burnout is a very serious threat to people's relationships, family, community lives and psychological well-being (Etzion & Pines, 1986). In this serious threat, psychological well-being, which is defined as "life's meaning and purpose" (Keyes, Shmotkin, & Ryff, 2002) and Psychoanalytic-Existential Model, which is considered as the result of burnout as "seeing life as empty and meaningless" are identical with each other. Based on this, it is expected that people who experience burnout in their work and marriage life also experience a decrease in their psychological well-being. The person experiencing burnout begins to see his/her life as meaningless and this causes a decrease in his/her psychological well-being. It can be expected that people with a high level of psychological well-being see life as meaningful and display a more solution-oriented approach to the problems they will encounter in their work or marriage life.

In the study, it was examined whether psychological well-being levels play a mediating role in the relationship between teachers' career burnout and couple burnout levels. In the findings obtained, it was concluded that the level of psychological well-being plays a partial mediating role in the relationship between the levels of career burnout and couple burnout in teachers. According to the definition of Baron and Kenny (1986), the mediating variable is defined as the variable that strengthens the independent variable over the dependent variable. In line with this information, it can be inferred that psychological well-being plays a mediating role in the relationship between career burnout and couple burnout levels in teachers, and that psychological well-being strengthens the effect of couple burnout on career burnout. When the relationships between the variables of the study were examined, it was concluded that the three variables were related to each other. The fact that teachers' psychological well-being levels are negatively related to career and couple burnout can be interpreted as the mediation of psychological well-being is an expected result in this model. It is thought that this result

can be explained by the fact that when the psychological well-being of the individuals is high, they may not have reflected the problems that they encountered in their occupational life and that caused their burnout to their married life. In addition, no other study modeling the mediating role of psychological well-being in the relationship between career burnout and couple burnout could be found in the literature. In this context, it can be said that this study has made significant contributions to the literature by testing this model and determining its partial mediation role.

This study, which examined the mediating role of psychological well-being in the relationship between teachers' career burnout and couple burnout, has some limitations. Although the study group consisted of teachers from a province, the fact that the participants were selected by convenient sampling method is a limitation of the research. In this respect, examining whether the same model produces a similar result on samples selected from teachers working in other provinces or regions with richer cultural diversity to represent the whole country may increase the generalizability of the research findings. Another limitation of this study is the use of self-report measurement tools. Therefore, in order to obtain more detailed findings and results in future research, it may be beneficial to use qualitative studies or mixed designs in which qualitative and quantitative methods are used together. In addition, longitudinal studies can be planned to understand whether the study model, which has a cross-sectional feature, is also effective over time. In addition, since this research has a limitation to examine the mediating role of psychological well-being in the relationship between career and couple burnout, future studies using research designs that include different psychological and socio-demographic variables will provide important information. The last limitation of this study is that teachers' career and couple burnout and psychological well-being were evaluated on the basis of the overall total score. Accordingly, it is thought that the multi-factor evaluation of these variables in new studies may contribute to the literature by providing deeper and more important information.

Based on the results and limitations of the research, some suggestions for research and application areas can be presented. Considering that the variables of the study, career burnout and couple burnout are negatively related to psychological well-being, it can be said that individuals' psychological well-being levels are effective on their career burnout and couple burnout scores. In this context, it can be suggested that mental health professionals should implement practices to increase the level of psychological well-being in their studies to reduce the burnout levels of individuals and their effects on different areas of their lives. Another important result of the study is that the level of psychological well-being has a partial mediating role in the relationship between teachers' career burnout and couple burnout scores in this respect, in studies that will examine the stress in family and business life and the relationships between family and business life, it is recommended to consider that the psychological well-being of individuals also has an effect. In some studies, a limited number of studies on couple burnout draws attention. It is recommended to contribute to the literature and practitioners by conducting more detailed studies on couple burnout or studies to examine the relationship with different variables. This study was conducted only on teachers working in public schools. It will be possible to make significant contributions to the literature through in-depth studies with teachers working in different institutions and on different professional groups. Finally, in the results, it was seen that there are significant relationships between career and couple burnout and psychological well-being and that psychological well-being mediates the relationship between career and couple burnout, in future studies, these two variables can be mediated by a single or multiple social, psychological and socio-demographic variables. It is thought that it will be useful to examine it in terms of variables.

### **Research and Publication Ethics**

In this study, all rules specified in the "Directive on Scientific Research and Publication Ethics of Higher Education Institutions" were followed. None of the actions specified under the second section of the Directive, "Actions Contrary to Scientific Research and Publication Ethics", have been carried out.

### **Disclosure Statements**

1. Contribution rate statement of researchers: First Author 50%, Second Author 50%
2. No potential conflict of interest was reported by the author.

### CrediT authorship contribution statement

Hazal KARAKUŞ: Writing – review & editing, data collection, data analysis, Methodology, Conceptualization

Burhan ÇAPRI: Writing – review & editing, data collection, data analysis, Methodology, Conceptualization

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## Academic Staff Satisfaction Scale: Validity and Reliability Study<sup>1</sup>

Ertuğ CAN<sup>2</sup>, Şenol SEZER<sup>3</sup>

### Abstract

In this study, it was aimed to develop an Academic Staff Satisfaction Scale to determine the satisfaction of academic staff in higher education. For this purpose, this study was conducted in a survey model. The population of this study consists of academic staff working in a total of 14 public universities in seven different geographical regions in the 2020-2021 academic year. Two separate sampling groups were selected to perform exploratory and confirmatory factor analyses. Sample I consists of 394 participants for Exploratory Factor Analysis (EFA). Sample II consists of 262 academic staff for Confirmatory Factor Analysis (CFA). In the development process of the Academic Staff Satisfaction Scale, a comprehensive literature review was conducted, an item pool was created, and expert opinions were taken for the language consistency and content validity of the items. A draft scale consisting of thirty-eight items of 5-point Likert type was developed as a result of the pilot application to ensure the item validity of the raw scale. For construct validity, Kaiser-Meyer-Olkin (KMO) and Bartlett Sphericity test values and the Varimax method were used to find the sub-factors, factor loadings, and variance percentages of the scale. As a result of the Exploratory Factor Analysis (EFA), it was determined that the scale had a 5-factor structure. Varimax rotation technique and principal component analysis were used to determine the factor loadings of the scale items and to analyze whether the items explained more than one factor. According to the Confirmatory Factor Analysis (CFA) results, the structure consisting of five factors and twenty-five items was confirmed. The first and second sub-dimensions consist of seven items each, the third sub-dimension consists of five items, and the fourth and fifth sub-dimensions consist of three items each. After analyzing the item contents, the first sub-dimension was named as "academic development," the second sub-dimension as "managerial attitude," the third sub-dimension as "communication and cooperation," the fourth sub-dimension as "physical infrastructure." The fifth sub-dimension was named as "social support." As a result, it can be said that the Academic Staff Satisfaction Scale is a valid and reliable scale. The scale can be used to determine the satisfaction of academic staff in higher education institutions.

**Keywords:** Academic staff, satisfaction, scale development, higher education.

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## Introduction

Job satisfaction is a pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating the achievement of one's job values (Leung, Siu, & Spector, 2000). Since the late 1950s, researchers have theorized the nature of job satisfaction. The models were developed that explain differences in job satisfaction and conducted empirical studies to test their models (Lacy & Sheehan, 1997). Herzberg et al. (1959) developed one of the best-known job satisfaction theories. Herzberg's (1987) two-factor theory supposed that the phenomenon of job satisfaction and/or dissatisfaction is a function of two classes of variables named motivator and hygiene factors.

One of the most crucial factors of productivity and success in higher education is the satisfaction of academic staff. There are different factors affecting the satisfaction level of academic staff. In general, these factors arise from the structure of the organizational culture. These can be listed as follows: interpersonal relations, working environment (Baş & Ardiç, 2002; Shakirova & Nurakhmetova, 2015), level of meeting expectations (Douglas, Douglas, and Barnes, 2006), participation in decision-making (Nutt, 1992; Serinkan & Bardakçı, 2009, Spector, 1986), team management, fair task distribution (Baş & Ardiç, 2002), and cooperation with colleagues (Karaman & Altunoğlu, 2007). Some of these arise from personal characteristics such as age, title, being abroad, prestige, and free decision-making (Karaman & Altunoğlu, 2007). Also, some of them stems from the work itself. These are the wage (Emmert & Taher, 1992; Karaman & Altunoğlu, 2007; Koçoğlu, 2015), the quality of the work, the work area (Bilge et al., 2007), the academic environment and the attitude of colleagues (Baş, 2002; Koçoğlu, 2015). Additionally, administrative workload, academic workload, progress and evaluation, research funding (Eker et al., 2007), and flexible working hours (Öztürk & Şahbudak, 2015) can be seen among these factors. According to Murat and Çevik (2008), the primary factor affecting job satisfaction of academic staff is management and organizational structure. In addition, education, academic activities, physical and technical conditions, socio-cultural conditions, health and communication factors affect academic satisfaction.

In Karadağ and Yücel's (2020) study, according to academics the variables such as academic freedom, burnout among academics, support of academic culture by the university, satisfaction of academics with university administration affect satisfaction of academic staff. In addition, academics' commitment and dedication to the university, cooperation between academics, toxicity of relationships in the institutional environment, perceived teaching quality, discomfort with the political attitude of the university administration provide important data in determining academicians' general perspective on satisfaction in higher education. It can be stated that these variables directly affect the satisfaction level of academics. Academics in Türkiye experience academic and social negativities such as excessive bureaucracy, lack of coordination, limited initiative of the university, discrimination at the assigned university, appointment by centralized scoring, and compulsory service obligation (Er et al., 2019). According to Karaman and Altunoğlu (2007), there is a need to develop policies to maximize the job satisfaction levels of academics in Türkiye. As can be seen, the satisfaction of academicians is affected by varied factors. Undoubtedly, as in all professions, satisfaction in academics is of significant importance in terms of productive work, success and happiness.

Academic satisfaction in higher education institutions is also important for the success of universities and quality assessment processes. It is seen that the Higher Education Quality Board [YÖKAK] (2020) bases the institutional external evaluation and accreditation processes of universities on criteria such as quality assurance system, education and training, research and development, management system and social contribution. Under the heading of education and training, there are targets to increase the competence of academic staff, develop them, ensure their continuity, monitor and develop them. These goals are directly related to the satisfaction of academic staff. In this sense, it is seen that practices and policies aimed at ensuring the satisfaction of academics in quality and accreditation processes, which have become increasingly widespread in higher education in recent years, have begun to gain importance.

Başkan (2001) asserted that higher education in Türkiye does not receive enough attention from the society in achieving its goals. However, in order to provide a healthy working environment for

academics and therefore to enable academics to contribute more to students, people and society, the problems experienced by academics must be determined accurately and clearly (Doğan et al., 2020). The results of numerous studies reveal that the satisfaction levels of academics vary according to their titles. For example, according to the results of the research conducted by Öztürk and Şahbudak (2015), academicians' job satisfaction levels increase in direct proportion to their titles, and the highest job satisfaction scores were reported by academics with the title of professor. This result shows that the status of academics directly affects job satisfaction. According to the research results of Özdemir and Gürbüz (2020), while academics indicate the highest satisfaction scores in the 'infrastructure' dimension, this dimension is followed by management-organization, relations with stakeholders, and education dimensions. Academicians expressed their satisfaction in the 'research' sub-dimension with the lowest score. It was also found that academic staff with the title of professor were more satisfied with the research dimension than those with the title of associate professor. Similarly, academic staff with the title of professor were more satisfied with the infrastructure and relations with stakeholders than those with the title of research assistant.

The satisfaction of stakeholders should not be ignored as the key to sustainability in the strategic decisions of higher education institutions. According to Hamutoğlu et al., (2020), one of the most important elements of ensuring quality in the higher education process is to ensure the satisfaction of all stakeholders. In addition, the expectations of all stakeholders should be considered (Yüksel et al., 2018). Undoubtedly, one of the most important of these stakeholders is the academic staff. Doğan et al. (2020) found a moderate level job satisfaction and role conflicts in academic staff. It should not be overlooked that measuring the satisfaction level of academic staff and evaluating the results is a prominent issue in higher education. Ensuring the satisfaction of academic staff in line with their perspectives and expectations is of significant importance in terms of quality in higher education. For this purpose, valid and reliable measurement tools are needed to determine the satisfaction level of academic staff. In recent years, it has been observed that all higher education institutions have conducted intensive studies to determine the satisfaction level of academic staff (Toker, 2011; Karadağ & Yücel, 2020). Although numerous research in the employee satisfaction field have been related to profit-making industrial and service organizations, there has been a growing interest in the satisfaction of employees in higher education. The reason for this increasing interest is the reality that higher education institutions are labor intensive, and their budgets are predominantly devoted to personnel and their effectiveness is largely dependent on their staff (Chen et al., 2006; Enders & Teichler, 1997; Hickson & Oshagbemi, 1999; Okpara et al., 2005; Rhodes et al., 2007). Consequently, satisfaction of the employees in higher education institutions is an especially critical issue (Küskü, 2003). It is thought that the Academic Satisfaction Scale, whose validity and reliability studies were conducted using scientific methods in this research may be sufficient to meet this need. The aim of this research is to develop an "Academic Staff Satisfaction Scale" to determine the satisfaction level of academics with universities.

## Method

This section includes the research model, population and sample, data collection tools, data collection process, and data analysis.

## Research Model

A general survey model was used in the research. The general survey model is research conducted on the entire population, or a group of samples selected from the population to reach a general conclusion about a subject under investigation (Karasar, 2006, p.79). Survey model research is used to quantitatively describe specific aspects of a given population. These aspects often involve examining the relationships among variables. Second, the data required for survey research are collected from people and are, therefore, subjective. Finally, survey research uses a selected portion of the population from which the findings can later be generalized back to the population (Creswell, 2015; Leedy & Ormrod, 2010). In survey research, independent and dependent variables are used to define the scope of study but cannot be explicitly controlled by the researcher. Before conducting the survey, the researcher must

predicate a model that identifies the expected relationships among these variables. The survey is then constructed to test this model against observations of the phenomena (Freankel & Wallen, 2009). The population of the research consists of faculty members working at a total of 14 state universities in seven different geographies in the 2020-2021 academic year. The data were obtained electronically via Google Forms. Before collecting the data, ethics committee approval and research permission were obtained from the relevant units.

During the development process of the Academic Staff Satisfaction Scale, a comprehensive literature review was conducted, an item pool was created, and expert opinions were consulted for the language consistency and content validity of the items. Two different sample groups were selected to perform exploratory and confirmatory factor analyses of the Academic Staff Satisfaction Scale. The views of 394 faculty members were consulted for Exploratory Factor Analysis (EFA) and 262 faculty members for Confirmatory Factor Analysis (CFA).

### Population and sample of the study

The demographic characteristics of the sample group within the scope of Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) are presented in Table 1.

**Table 1.** Demographic Characteristics of Sample Group

Variable	Feature	Exploratory Factor Analysis (EFA)		Confirmatory Factor Analysis (CFA)	
		n	%	N	%
Gender	Female	146	37	99	38
	Male	248	63	163	62
	Total	394	100	262	100
Vocation	Lecturer	314	80	205	78
	Teaching assistant	60	15	49	19
	Research assistant	20	5	8	3
	Total	394	100	262	100
Age	25-35 year	77	20	42	16
	36-45 year	169	43	123	47
	46-55 year	68	17	52	20
	56+	80	20	45	17
	Total	394	100	262	100
	1-10 years	225	57	155	59
	11-20 years	106	27	58	22

Seniority				
21-30 years	46	12	34	13
31 +	17	4	15	6
Total	394	100	262	100

In Table 1, it is seen that the majority of the academic staff are male (EFA: 63%, CFA: 62%), and their positions are listed as lecturer, teaching assistant and research assistant. It is also seen that the age of the participants is distributed in the range of 36-45 years and their job seniority is in the range of 1-10 years. The sample group within the scope of Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) has similar demographic characteristics.

The population of this study consists of lecturers working in a total of fourteen state universities in seven different geographical regions in the 2020-2021 academic year. In scale development studies, it is of significant importance that the sample has the adequacy to represent the population. In accordance with this purpose, two different samples were formed for exploratory and confirmatory analyses procedures. Some criteria were taken as basis in determining the sample size. For example, Nunnally (1979) states that a sample group of 300 people is sufficient in scale development studies and that the sample size should be at least 10 times the number of items. Bryman and Cramer (2001) suggest that the sample size should be at least 5 times the number of items, and Gorsuch (1983) suggests at least 15 times the number of items. In this study, there are a total of 38 items in the draft scale form. The sample size determined for Exploratory and Confirmatory Factor Analyses procedures were ensured to be at least 10 times the number of items in the scale. According to these criteria, Sample I consisted of 394 participants for the exploratory factor analysis. The sampling group (Sample I) was selected from the population by using simple random sampling methods. The Sample II consists of 262 participants for confirmatory factor analysis. The Sample II was also selected by simple random sampling method. According to 95% certainty level, 356 participants from a population of 5000 are theoretically sufficient for a population of different sizes (Anderson, 1990, as cited in Balcı, 2004). When it comes to scale development studies, Comrey and Lee (1992) consider 100 participants as a poor sample, 200 participants as an average sample, 300 participants as a good sample, 500 participants as a very good sample and 1000 participants as an excellent sample. According to these explanations, it can be stated that the sample size of this study is good.

### Data collection tools and process

The Academic Staff Satisfaction Scale development process was carried out in the following stages. These stages are creating the item pool based on literature, consulting expert opinions for the language validity of each item and the content validity of the items in the scale, conducting pre-testing, factor analysis and reliability tests. First, a literature review was conducted to create an item pool. During the creation of the scale items, utmost care was taken to ensure that the items were clear and understandable, that each item was related to real life, and that each item expressed a single judgment. In this context, a draft 5-point Likert-type scale consisting of 38 items was developed. For the scale items, the expressions "Never" (1), "Rarely" (2), "Partly" (3), "Mostly" (4), "Always" (5) were used.

Expert opinion was consulted during the process of ensuring the content validity of the scale items. At this stage, the opinion of faculty members who are experts in the field of Educational Sciences (Measurement and Evaluation in Education, Educational Management) benefited. Büyüköztürk (2011) recommends evaluating the content validity of the scale items and making necessary corrections by obtaining expert opinion to guarantee the validity of the measurement tool. To evaluate the suitability and comprehensiveness of the raw scale items consisting of 38 items in the item pool prepared based on literature review, the opinions and suggestions of five faculty members working in the educational sciences departments of different universities were taken.

For the suitability of the scale items in terms of language and meaning, the opinions of language experts at Kırklareli and Ordu Universities were consulted, and the necessary adjustments were made to



the scale items, considering the suggestions. In line with expert opinions and feedback received from academics, it was decided to write all scale items as positive expressions. During the pre-test phase of the scale, the draft scale consisting of 38 items was applied to 20 faculty members within the scope of the pilot application and the linguistic comprehensibility of the draft scale items was tested. As a result of the pilot application, it was understood that the scale items were understood and answered correctly by the faculty members.

After the pilot application, the scale items were digitally transferred via Google Forms and the opinions of academicians working at 12 different state universities were consulted. Data from 394 academics were analyzed for Exploratory Factor Analysis. Each data set collected via Google Forms was given an ID number and data was entered into the SPSS program. After checking whether the data was entered into the system completely, the data analysis process began. The arithmetic mean scores of the items in the sub-dimensions of the Academic Staff Satisfaction Scale and the entire scale were determined. The scoring for each judgment on the Likert rating scale is as follows: 4.21/5.00=Always; 3.41-4.20 Mostly; 2.61-3.40 Partly; 1.81-2.60 Rarely; 1.00-1.80 Never.

### **Data analysis**

IBM SPSS Statistics 25 program was used for data analysis. At this stage, first of all, the construct validity of the "Academic Staff Satisfaction Scale" was evaluated. Both exploratory and confirmatory factor analysis were used to test construct validity. After determining that the Kaiser-Meyer-Olkin (KMO) and Bartlett Sphericity test values were suitable for analysis, Exploratory Factor Analysis was applied to the data set. At this stage, the sub-factors of the scale, their factor loadings (eigenvalues) and the percentage of variance they explained were found by using the Varimax rotation method. At this stage, a scree plot was also created to facilitate determining the number of sub-dimensions of the scale. When any item is included in the scale, the rule is that its factor loading must be at least .40. According to Büyüköztürk (2011), for an item to belong to a factor, it is sufficient for the factor load value to be .45 or above. If necessary, this value can be reduced to .30. It is also stated that the difference between item factor loadings should be at least .10 in order to prevent overlap. In the last stage, the sub-dimension to which each scale item belonged and the factor loadings in that sub-dimension were determined. To test the construct validity of the scale, the correlation between the sub-dimensions and the correlation between the sub-dimensions and the total of the scale items were examined. Pearson Correlation Coefficient was used for this purpose. Internal consistency coefficients were obtained by dividing the items into two equal halves (Spearman & Guttman) and Cronbach's Alpha ( $\alpha$ ). Finally, the reliability coefficients of all items of the test were obtained by determining the item-total correlation.

As a result of Exploratory Factor Analysis (EFA), it was determined that the scale had a five-factor structure. Then, Confirmatory Factor Analysis (CFA) was applied to test the accuracy of the five-factor structure. Moreover, in determining which factor the variable groups obtained by Exploratory Factor Analysis are highly related to, Confirmatory Factor Analysis is used to determine whether the variable groups contributing to the number of 'k' factors are adequately represented by these factors (Özdamar, 2002).

### **Ethical approval of the research**

Before the data were collected, the approval of the ethics committee was obtained with the decision of Ordu University Social and Human Sciences Research Ethics Committee dated 27/10/2020 and numbered 220-79.

### **Findings**

#### **Construct Validity**

After analyzing the data set, the factor structure of the scale was tested. For this purpose, Kaiser-Meyer-Olkin (KMO) and Bartlett Sphericity tests were applied, and it was checked whether the values were appropriate to determine the factor structure of the scale. According to Çokluk, Şekercioğlu, and Büyüköztürk (2010) and Şencan (2005), the KMO test is a suitability test that tries to determine the correlations between variables and the suitability of factor analysis. Kaiser-Meyer-Olkin Measure of



Sampling Adequacy test value varies in the range of 0-1. If the value of a variable is accurately estimated by other variables, the KMO value is 1.00. In cases where the value of a variable cannot be adequately estimated by other variables, it is recommended not to use factor analysis. Regarding the KMO values, it is stated that KMO test results will not be accepted if they are less than .50. KMO values 0.50-0.60 is bad, 0.61-0.70 is poor, 0.71-0.80 is moderate, 0.81-0.90 is good, and 0.90 and above is excellent. After determining that the values were suitable for analysis, (KMO=.89, Bartlett's Test of Sphericity  $X^2=4135,022$ ;  $df=630$ ,  $p<.001$ ) the sub-factors of the scale, factor loadings and the variance values they explained were found using the Varimax method. Varimax rotation technique and principal component analysis were used to determine the factor loadings of the scale items and to analyze whether the items explained more than one factor. As a result of the Exploratory Factor Analysis (EFA), it was determined that the scale had a 5-factor structure.

### Exploratory Factor Analysis (EFA)

To perform Exploratory Factor Analysis (EFA), the KMO value must be at least 0.60 and the Bartlett Sphericity test must be significant (Büyüköztürk, 2011, p.126). Data analysis showed that the KMO value was .891. These results verified that the data set was sufficient for factor analysis. Bartlett Sphericity test ( $X^2=4135,022$ ,  $p<.001$ ) was also found significant. According to these results, it was understood that the variable measured in the population parameter was multidimensional.

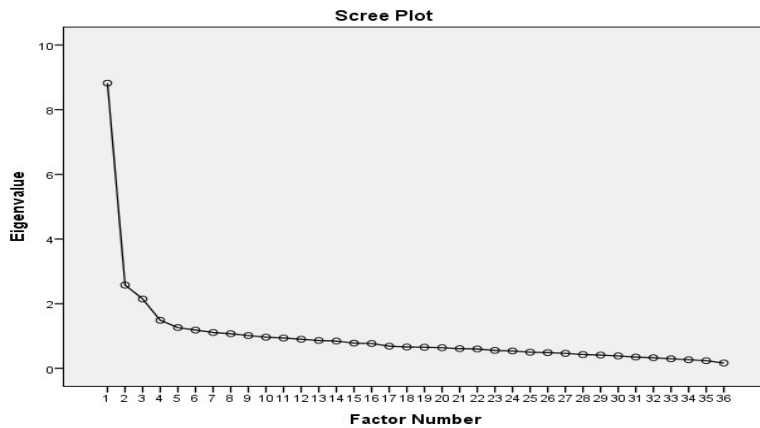
The variance values explained by the factors were given in Table 2.

**Table 2.** *Factors and Variance Values*

Factors	Eigenvalues	% of variance	Cumulative %
1	8.821	24.503	24.503
2	2.577	7.159	31.662
3	2.146	5.960	37.622
4	1.487	4.131	41.753
5	1.262	3.506	45.259

As seen in Table 2, Academic Staff Satisfaction Scale appeared in a 5-factor structure according to factor values. Moreover, the scree plot presented in Figure 1 confirms this result. The eigenvalue of the first factor is 8.821 and the percentage of variance it explains is 24.503%. The eigenvalue of the second factor is 2.577 and the percentage of variance it explains is 7.159%. In addition, the eigenvalue of the third factor is 2.146 and the percentage of variance it explains is 5.960%. Moreover, the eigenvalue of the fourth factor is 1.487 and the percentage of variance it explains is 4.131%. And finally, the eigenvalue of the fifth factor is 1.262 and the percentage of variance it explains is 3.506%. In total, the scale explains 45.259% of the variance of the trait measured in the population parameter. According to Exploratory Factor Analysis, the percentage of variance explained by a scale with high construct validity should be at least 40%. The result obtained in this study exceeds this criterion.

The scree plot is presented in Figure 1.



**Figure 1**

*Accumulation graph*

When the scree plot presented in Figure 1 is analyzed, the breaking points confirm that the scale should consist of 5 factors. After determining the factors of the scale, the factor loadings of the scale items were determined using Varimax rotation technique and principal component analysis, and it was analyzed whether the items explained more than one factor.

Item factor loadings are presented in Table 3.

**Table 3.** *Item Factor Loadings*

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
30	.737				
32	.735				
33	.654				
34	.652				
31	.647				
36	.570				
37	.471				
15		.715			
16		.593			
17		.590			
24		.539			
21		.430			
23		.422			

19	.417		
26		.741	
25		.676	
27		.577	
28		.517	
29		.501	
9			.464
8			.444
13			.423
5			.479
12			.458
2			.435

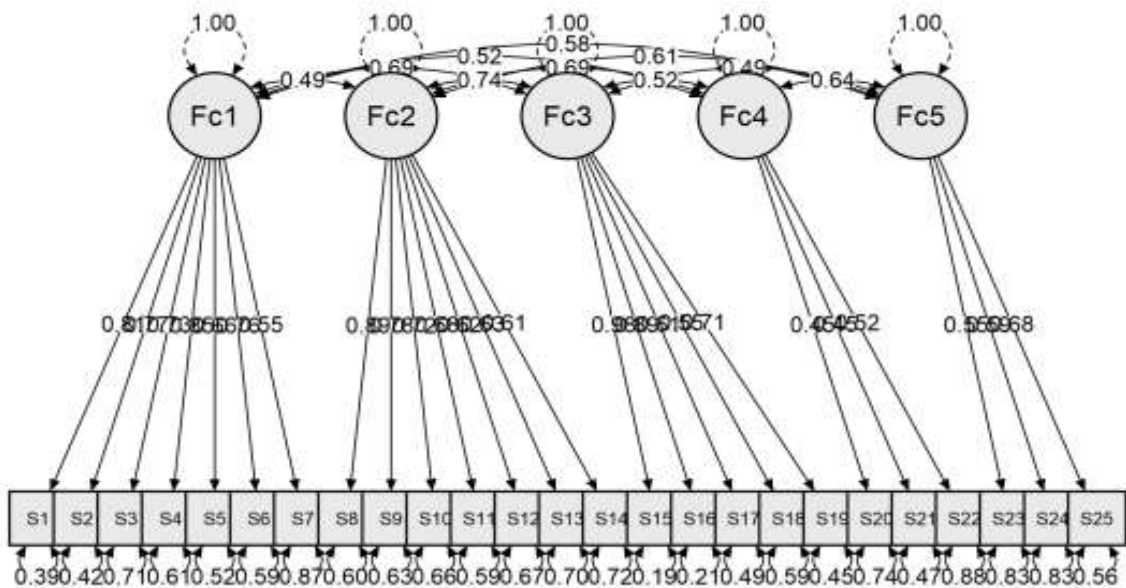
\*\*\* $p < .001$

In Table 3, item factor loadings are given. As a result of factor analysis, a 5-factor scale structure including 25 items emerged. It was decided to remove items 35 and 38 from the scale set because they were overlapping. Items 1, 3, 6, 7, 10, 11, 14, 18, 20 and 22 were removed from the scale set because their factor loads were below the determined correlation value (factor load should be .40 and above). Table 3 shows that the first sub-dimension consists of seven items (30, 31, 32, 33, 34, 36, 37), and the second sub-dimension consists of seven items (15, 16, 17, 19, 21, 23, 24). In addition, the third sub-dimension consists of five items (25, 26, 27, 28, 29), the fourth sub-dimension consists of three items (8, 9, 13), and the fifth sub-dimension consists of three items (2, 5, 12). After analyzing the item contents, the first sub-dimension was named as "academic development", the second sub-dimension as "managerial attitude", the third sub-dimension as "communication and cooperation", and the fourth sub-dimension as "physical infrastructure". And finally, the fifth sub-dimension was named as "social support".

### Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis is used to determine which factor groups of variables obtained through Exploratory Factor Analysis are highly related to and to confirm the factor structure of the scale (Özdamar, 2002). JASP Team 2020, JASP Version 0.14.1 was used for Confirmatory Factor Analysis.

The path diagram is presented in Figure 2.



**Figure 2**  
*CFA Result Path Diagram.*

The path diagram in Figure 2 shows the model variables, factor loadings, unexplained variance, and some goodness of fit values. After creating the path diagram, the significance of the standardized coefficients of the items belonging to the factors should first be checked. All items were found to be significant under the relevant factors and factor load values were analyzed. An error variance of 0.90 and above is a condition that weakens the fit of the model to the data, and it is stated that variables with very high error variance can be removed from the model (Çokluk et al., 2010; Kline, 2005). In addition, the factors loading between the factor and the related items are expected to be greater than 0.30. In Figure 2, it is observed that the path coefficients between items and factors vary between 0.49 and 0.74. In addition, the error variances of the items indicating the unexplained part of the variance are less than 0.90.

After examining the values in the path diagram, the goodness of fit indices produced must be examined in order to evaluate the model as a whole. Fit index values were given in Table 4.

**Table 4.** *Fit Index Values*

$\chi^2$	sd	$\chi^2/sd$	AGFI	GFI	CFI	IFI	NFI	NNFI	RMSEA	SRMR
677.35	460	1.47	0.84	0.88	0.91	0.92	0.84	0.90	0.065	0.054

In Table 4, it is seen that the  $\chi^2$  value is 677,35. The value  $\chi^2/sd$  is 1.47. A value of 5 and below indicates that the model fit is good (Çokluk et al., 2010). In addition, it is stated that it would be more appropriate to evaluate the model in confirmatory factor analysis by considering multiple fit indices rather than depending on a single value (especially  $\chi^2$ ). Accordingly, when the fit indices of the scale are examined, it is seen that the AGFI value is 0.84 and the GFI value is 0.88. According to Byrne (1998), AGFI and GFI values above 0.80 indicate an acceptable fit. CFI (0.91), NFI (0.84) and NNFI (0.90) values also indicate a good fit. According to Çokluk et al. (2010), the good fit value for GFI, AGFI, CFI, NFI, NNFI, IFI, and RFI fit indices is 0.90 and the perfect fit value is 0.95 and above. Finally, RMSEA (0.065) and SRMR (0.054) values were examined, and these values were below 0.08, indicating a good fit. As a result, when all these fit index values obtained with CFA are evaluated together, it is

seen that the 5-factor structure of the "Academic Personnel Satisfaction Scale", which consists of 25 items, generally fits the data well and the model is confirmed.

In the last stage of the construct validity procedures, the correlation between the subscale scores and the correlations between the subscales themselves were examined. Correlation coefficients were calculated according to the Pearson Correlation Coefficients formula. The correlation coefficients determined after this process are presented in Table 5.

**Table 5.** Relationships between the Subscales of the Scale

Sub-Dimension	1	2	3	4	5
1. Academic Development	-				
2. Managerial Attitude	.598**	-			
3. Communication and Cooperation	.770***	.821***	-		
4. Physical Infrastructure	.708***	.853***	.693**	-	
5. Social Support	.714***	.748***	.635**	.882***	-

\*\*\* $p < .001$

In Table 5, it is seen that the correlation between the sub-dimensions of the scale is statistically significant at the  $p < .001$  level. The correlation between the sub-dimensions is expected to be neither too high nor too low. A moderate correlation ( $r = .598$ ,  $p < .001$ ) was found between "academic development" and "managerial attitude" sub-dimension. A high-level correlation ( $r = .770$ ,  $p < .001$ ) was found between "academic development" and "communication and cooperation" sub-dimension. In addition, a high-level correlation ( $r = .708$ ,  $p < .001$ ) was found between "academic development" and "physical infrastructure" sub-dimension. Moreover, a high-level correlation ( $r = .714$ ,  $p < .001$ ) was found between "academic development" and "social support" sub-dimension.

A high-level correlation ( $r = .821$ ,  $p < .001$ ) was found between "managerial attitude" and "communication and cooperation" sub-dimension. In addition, a high-level correlation ( $r = .853$ ,  $p < .001$ ) was found between "managerial attitude" and "physical infrastructure" sub-dimension. Moreover, a high-level correlation ( $r = .748$ ,  $p < .001$ ) was found between "managerial attitude" and "social support" sub-dimension.

A moderate level correlation ( $r = .693$ ,  $p < .001$ ) was found between "communication and cooperation" and "physical infrastructure" sub-dimension. In addition, a moderate level correlation ( $r = .635$ ,  $p < .001$ ) was found between "communication and cooperation" and "social support" sub-dimension. And finally, a high-level correlation ( $r = .882$ ,  $p < .001$ ) was found between "physical infrastructure" and "social support" sub-dimension.

The findings show that the sub-dimensions do not overlap with each other and are not very independent from each other. According to these results, it can be said that the construct validity of the scale is high.

### Findings Related to Reliability

Reliability analyses are aimed at calculating internal consistency coefficients. Internal consistency coefficients are calculated by two different methods. The first is the technique of dividing a data set into two halves (Spearman-Brown, Guttman) and the other is Cronbach's Alpha ( $\alpha$ ) Coefficient, which is calculated based on the variance of each item. The internal consistency coefficients of the Academic Staff Satisfaction Scale were calculated with two different methods. The Cronbach Alpha Coefficient of the total test is  $\alpha = .92$ , the Spearman-Brown Coefficient is .81 and the Guttman Coefficient is .780.

## Conclusion, Discussion and Recommendations

As a result of the research, a 5-factor "Academic Staff Satisfaction Scale" consisting of 25 items was developed. The sub-dimensions of the scale were named as "academic development, managerial attitude, communication and cooperation, physical infrastructure, and social support" as a result of the analyses AFA and EFA. The dimensions of the scale, whose validity and reliability were established through Exploratory Factor Analysis and Confirmatory Factor Analysis, and the factor loadings of the 25 items are presented in Appendix B.

There are different scale development studies on the subject. Tekindal et al. (2022) tried to determine the satisfaction of academic staff in the sub-dimensions of management and organization, education-training, scientific activities, administrative and social services, university-community relations, institutional belonging, distance education and institutional website. Anıl et al. (2017) examined the factors affecting job satisfaction of academics in higher education in six dimensions as "administrative and organizational structure", "institutional and academic activities", "social, cultural, health services", "physical and technical conditions", "educational activities" and "internal communication".

Since 2015, higher education institutions in Turkey have been regularly measuring the satisfaction of academic staff within the scope of "Quality Assurance in Higher Education Studies". However, there is no standardized measurement tool to measure the satisfaction of academic staff in higher education institutions. Therefore, the "Academic Staff Satisfaction Scale" can be used nationally and internationally to determine the satisfaction of academic staff in higher education institutions. Thus, it can contribute to quality improvement studies in higher education. Qualitative research can be conducted to obtain more in-depth data on academic staff satisfaction in higher education.

## Research and Publication Ethics

In this study, all rules specified in the "Directive on Scientific Research and Publication Ethics of Higher Education Institutions" were followed. None of the actions specified under the second section of the Directive, "Actions Contrary to Scientific Research and Publication Ethics", have been carried out.

## Disclosure Statements

1. Contribution rate statement of researchers: First Author 50%, Second Author 50%
2. No potential conflict of interest was reported by the author.

## Credit authorship contribution statement

Ertuğ CAN: Writing – review & editing, data collection, data analysis, Methodology, Conceptualization

Şenol SEZER: Writing – review & editing, data collection, data analysis, Methodology, Conceptualization

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### EK 1. AKADEMİK PERSONEL MEMNUNİYET ÖLÇEĞİ

Boyut	Sıra		Faktör Yüğü
Akademik Gelişim	1	Araştırma ve uygulama merkezleri yeterlidir	.737
	2	Akademik personel sayısı yeterlidir	.735
	3	Lisansüstü eğitim altyapısı yeterlidir	.654
	4	Kütüphane akademik gelişimim açısından yeterlidir	.652
	5	Yurtiçi/yurtdışı araştırma projeleri özendirilir	.647
	6	Akademik yükselme ölçütleri yeterli ve adildir	.570
	7	Çalıştığım birimdeki idari personel sayısı yeterlidir	.471
Yönetimsel Tutum	8	Yönetim tarafsız ve adildir	.715
	9	Kararlar birlikte alınır	.593
	10	Ödüllendirme politikaları adildir	.590
	11	Sorunlar kısa sürede çözülür	.539
	12	Görüş ve önerilerim dikkate alınır	.430
	13	Alınan kararlar yerinde ve isabetlidir	.422
	14	Çalışanlar arasında sağlıklı bir iletişim vardır	.417
İletişim ve İşbirliği	15	Paylaşma ve dayanışma kültürü egemendir	.741
	16	Çalışanlar çözümün parçasıdır	.676
	17	Çalışma ortamı güvenlidir	.577
	18	İdari personelin tutum ve davranışları naziktir	.517
	19	Gelişmelerden haberdar edilirim	.501

Fiziksel Altyapı	20	Kampus ortamı sakin ve huzurludur	.464
	21	Isıtma altyapısı yeterlidir	.444
	22	Çalışma odaları yeterlidir	.423
Sosyal Destek	23	Servis/ulaşım hizmetleri yeterlidir	.479
	24	Spor tesisleri yeterlidir	.458
	25	Sosyal ve kültürel etkinlikler yeterlidir	.435

#### Appendix B. The scale (In English): ACADEMIC STAFF SATISFACTION SCALE

Dimension	No		Factor Loading
Academic Development	1	Research and application centers are adequate	.737
	2	The number of academic staff is adequate	.735
	3	Graduate education infrastructure is adequate	.654
	4	The library is adequate for my academic development	.652
	5	Domestic/international research projects are encouraged	.647
	6	Academic promotion criteria are adequate and fair	.570
	7	The number of administrative staff in my unit is adequate	.471
Managerial Attitude	8	Management is impartial and fair	.715
	9	Decisions are taken together	.593
	10	Reward policies are fair	.590
	11	Problems are solved in a short time	.539
	12	My opinions and suggestions are considered	.430
	13	Decisions taken are appropriate and accurate	.422
	14	There is a healthy communication between employees	.417
Communication and Cooperation	15	A culture of sharing and solidarity prevails	.741
	16	Employees are part of the solution	.676

	17	The working environment is safe	.577
	18	Attitudes and behaviors of administrative staff are courteous	.517
	19	I will be informed about developments	.501
Physical Infrastructure	20	Campus environment is calm and peaceful	.464
	21	Heating infrastructure is adequate	.444
	22	Study rooms are adequate	.423
Social Support	23	Service/transportation services are adequate	.479
	24	Sports facilities are adequate	.458
	25	Social and cultural activities are adequate	.435