

## Cultural Intelligence Levels of Pre-Service Teachers

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### Öz:

Farklı kültürlerden insanların bazı nedenlerden dolayı birlikte yaşadığı günümüzün küresel dünyasında, farklı kültürlerle uyum sağlama ve farklı kültürlerle iletişim kurma konusunda daha yüksek yetenek anlamına gelen kültürel zekânın önemi artmıştır. Eğitim, farklı kültürel geçmişe sahip insanlarla birlikte yaşamının nedenlerinden biridir ve üniversiteler genellikle bunu yapmak için temel ortamdır. Bu nedenle, üniversite öğrencileri ile personelinin yüksek kültürlerarası yetkinliğe sahip olması çok önemlidir. Bu bağlamda bu çalışma, Türkiye'deki bir devlet üniversitesinde öğrenim gören öğretmen adaylarının kültürel zekâ (CQ) düzeylerini araştırmayı ve kültürel zekâ düzeylerindeki farklılıkları demografik değişkenler açısından incelemeyi amaçlamaktadır. Tarama modeli kullanılarak yapılan bu çalışmaya çeşitli bölümlerden 303 öğretmen adayı katılmıştır. Yapılan analizlerin sonuçları, cinsiyetlerin katılımcıların CQ düzeyleri üzerinde herhangi bir fark yaratmamasına rağmen; yaş, sınıf ve bölüm dâhil bazı demografik değişkenler açısından anlamlı farklılıklar bulunduğunu ortaya koymuştur. Sonuçlara göre olası çıkarımlar, uluslararası programları mümkün kılmak ve desteklemek, öğrencileri sosyal bilimler ve dil çalışmalarını mümkün olan en erken zamanda tanıştırmak olarak belirtilebilir.

**Anahtar Kelimeler:** Kültürel zekâ, öğretmen adayları, kültürlerarası yetkinlik.

### Abstract:

In today's global world where people from different cultures live together due to some reasons, cultural intelligence has gained more importance as high cultural intelligence means higher ability to adjust, adapt and communicate with different cultures. Education is one of the reasons for living together with people who have different cultural backgrounds, and universities are generally the main environment to do so. Thus, it is crucially important for university students and staff to have high intercultural competence. Therefore, this study aims at investigating the cultural intelligence (CQ) levels of pre-service teachers at a public university in Turkey, and to examine the differences on their cultural intelligence levels in terms of some demographic variables. In this descriptive survey model study, 303 pre-service teachers from various departments participated. The results revealed that although gender did not make any difference on the CQ levels of the participants, significant differences were found in terms of some demographic variables including age, class and department. Possible implications according to the results consist of enabling and supporting international programs and make students familiar with the social science and language studies as early as possible.

**Keywords:** Cultural intelligence, pre-service teachers, intercultural competence

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## INTRODUCTION

What is intelligence and how it should be defined have been the interest of many educators for a long time. In the first definitions about intelligence, it was considered as a single factor and focused only on the academic dimensions of intelligence (Ramis & Karistina, 2010). According to the single-factor theory, intelligence is expressed as the score from traditional intelligence tests focusing only on numerical and verbal competencies (Benson, 2003). However, as a result of later studies, it has been suggested that intelligence has a multi-factorial structure such as verbal understanding, word fluency, reasoning, memory, and perceptual speed, as well as verbal and mathematical aspects (Bacanlı, 2000). Accordingly, the definitions of intelligence which are based on the multi-factor intelligence understanding have started to be more respected. In particular, Multiple Intelligence Theory put forward by Gardner draws attention among the definitions based on multi-factor intelligence (Özden, 2010). In his book, *Frames of Mind*, published in 1983, Gardner denied that intelligence has a singular structure that can be measured by intelligence tests, and argued that there are at least seven different intelligence fields in each individual: verbal-linguistic, logical-mathematical, visual-spatial, musical-rhythmic, physical-kinesthetic, social-interpersonal, intrinsic-self-directed intelligence (Gardner, 1993). After Gardner introduced the theory of multiple intelligence, different intelligence fields were proposed by different educators and psychologists such as emotional intelligence (Goleman, 1995), practical intelligence (Sternberg et al., 2000) and ecological intelligence (McCallum, 2008). One of these proposed intelligence areas is cultural intelligence which arises in response to the question of why some individuals are more successful in interacting with individuals from different cultures (Alon & Higgins, 2005; Earley, 2002).

Cultural intelligence (CQ) is defined as the capacity of the individual to adjust their behavior according to the requirements of the cultures with which they interact, communicate effectively with individuals from different cultures, and adapt to cultural differences (Ang, Van Dyne, & Koh, 2008). Cultural difference is based on the diversity of cultural elements, and is defined as the variations seen between individuals or groups depending on ethnicity, race, socioeconomic level, gender, disability, language, religion, sexual orientation and geographic region (NCATE, 2008, as cited in Ünlü & Örtten, 2013). Therefore, as every society has a culture, human communities within the same society develop different cultures according to their common past, the region they live in, the language they speak, their economic occupation areas and their socio-economic status (Cırık, 2008). In this context, cultural intelligence can be described as a field of intelligence that is proposed to explain the differences between people in terms of their ability to interact with other societies and different cultures within a society. In today's global world where people from different societies, and therefore, different cultures come to live together due to some reasons such as education, increasing standards of living, trade, marketing, politics, and etc.; cultural intelligence as described above has gained more importance as high cultural intelligence means higher ability to adjust, adapt and communicate with different cultures.

As mentioned above, education is one of the reasons for living together with people who have different cultural backgrounds, and universities are generally the main environment to do so. Thus, it is crucially important for university students and staff to have intercultural sensitivity, adroitness, and competence, that is, high cultural intelligence, as living in such an environment would be difficult to handle otherwise. Although there are ample studies on

intercultural communication and intercultural sensitivity in universities and other areas which are expected to have multicultural settings, few studies, to the best knowledge of the author, have emphasized the cultural intelligence levels of such places including universities. Therefore, in the present study, the aim is to investigate the cultural intelligence levels of pre-service teachers continuing their education in Faculty of Education at Pamukkale University, Denizli, Turkey, and to examine the differences in their cultural intelligence levels in terms of some demographic variables.

Globalization and the increasingly multicultural characteristic of many countries and societies have brought the emphasis on whether countries are able to develop people who are multiculturally educated and globally engaged. Consequently, studies investigating educational programs and students receiving education through these programs have been conducted especially in recent years.

Goh (2012) examined the fit between the theory and practice of cultural intelligence and citizenship education and offered examples for how teachers can teach with cultural intelligence and develop culturally intelligent students who will become multiculturally educated and globally engaged citizens. He concluded that developing cultural competence should be a non-negotiable requirement for growing active and concerned citizens in our twenty-first century globalized world and invited teachers, school administrators and education policymakers to try teaching with and for cultural intelligence, study and evaluate how well it works, conduct research, offer feedback, be creative and critical, and exchange ideas about the utility of the cultural intelligence framework for character and citizenship education.

In the literature, attitudes and perceptions towards intercultural education and cultural intelligence have also been investigated. For example, Spinthourakis, Karatzia-Stavlioti and Roussakis (2009) tried to assess the cultural sensitivity of a sample of Greek University Elementary education students using an adjusted version of Chen and Starosta's Intercultural Sensitivity Scale, and found that Greek student intercultural sensitivity is already high, but that they feel they are not well enough prepared by their training for future educational work that might demand intercultural sensitivity. In a similar study, Olaya and Rodríguez (2013) conducted a qualitative research project that explored pre-service English teachers' perceptions and attitudes toward the aspects of culture and intercultural competence addressed in their English classes in the undergraduate programs at three Colombian universities. Their findings revealed that pre-service teachers are mainly taught elements of surface culture and lack full understanding of intercultural competence. They also see culture as a separate aspect of their future teaching career. They also provided alternatives so that pre-service teachers might overcome limitations of teaching culture as preparation for their future teaching career in the foreign language classroom.

Intercultural competence and cultural intelligence have also been dealt with in terms of their effects on different variables. For example, Collins, Duyar and Pearson (2016) examined whether the levels of cultural intelligence (CQ) of principals and teachers influence Latino students' achievement, and the findings indicated that principals' level of CQ significantly predicted Latino students' achievement scores of eight grade math and eight grade language arts, and multicultural exposures of teachers, such as being multilingual and visiting other countries, significantly predicted Latino students' language arts performance. In another study, Ekici (2017) aimed at examining the relationship between cultural intelligence levels of

pre-service and pre-school teachers, and their attitudes towards multicultural education, and found significant relationship between cultural intelligence levels and attitudes of pre-school teachers towards multicultural education. Cultural intelligence levels of pre-school teachers significantly vary by the type of university they study at, their state of being raised in an environment where different cultures coexist; their attitudes towards multicultural education significantly also vary by the type of university they study at. Similarly, Petrovic (2011) explored which variables could be considered as predictors of cultural intelligence, and found that significant predictors of teachers' cultural intelligence are enjoyment of intercultural communication, experiencing multicultural classes as a challenge, openness to cultural learning and contacts with people from other cultures.

In the related literature, studies investigating which variables can be effective on the intercultural competence or cultural intelligence levels of people, especially university students and staff, are scarce. Yet, one example is Sarıcoban and Öz's study (2017). They aimed at exploring pre-service English teachers' intercultural communicative competence (ICC) and examining whether such factors as study abroad, gender and academic achievement reveal any differences in their ICC. Results of this study yielded high level of ICC among the participants. In addition, there were no significant differences in male and female participants' ICC levels and there was no significant relationship between the participants' ICC and their academic achievement. However, further correlation findings showed strong positive correlations between the participants' studying abroad and their ICC levels. In another study, Khodadady and Ghahari (2011) investigated the validity of Cultural Intelligence Scale (CQS) and its relationship with gender, education, travelling abroad and place of living in Iran with undergraduate and graduate students in five different fields. The results of the study showed that the female participants differed significantly from their male counterparts on their CQ. The significant difference also extended to educational level because the graduate participants had higher CQs than the undergraduates. Surprisingly, the participants who had not travelled abroad had higher total CQ than those who had.

### ***Purpose of the Study***

In the present study, the aim is to investigate the cultural intelligence levels of pre-service teachers continuing their education in Faculty of Education at Pamukkale University, Denizli, Turkey, and to examine the differences in their cultural intelligence levels in terms of some demographic variables. According to the aim of the study, the research questions below will be tried to answer:

- What is the average cultural intelligence level of the participating pre-service teachers at Pamukkale University?
- Is there any significant difference in the cultural intelligence levels of the participating pre-service teachers in terms of gender, age, graduated high school types?
- Is there any significant difference in the cultural intelligence levels of the participating pre-service teachers in terms of the number of different countries visited and duration of the experience in abroad?
- Is there any significant difference in the cultural intelligence levels of the participating pre-service teachers in terms of whether they have taken an intercultural lesson?
- Is there any significant difference in the cultural intelligence levels of the participating pre-service teachers in terms of their class and departments?

## METHODOLOGY

### *Research Design*

This research is a descriptive study based on the survey model. According to Büyüköztürk (2007), descriptive studies are research approaches that aim to describe a situation that existed in the past or still exists as it is. In other words, it is a scientific research method describing available situations or cases. The purpose of the present study, accordingly, is to describe the existing cultural intelligence levels of participating pre-service teachers and to investigate the possible affecting variables to better understand the situation regarding cultural intelligence.

### *Participants*

The participants consisted of pre-service teachers studying at Faculty of Education at Pamukkale University in 2019-2020 academic year, spring semester. Convenience sampling method (Creswell, 2009) was used in the study and as many pre-service teachers in English Language Teaching, Turkish Language Teaching, Maths Teaching, Science Teaching, and Social Sciences Teaching were tried to reach via online surveys. In total, 303 pre-service teachers from those departments participated in the study.

**Table 1.** Participants

<b>Department</b>	<b>Frequency</b>
EFL Teaching	131
Turkish L Teaching	23
Social Sciences Teaching	25
Science Teaching	32
Maths Teaching	86
<b>Gender</b>	<b>Frequency</b>
Female	219
Male	78
<b>Class</b>	<b>Frequency</b>
1	40
2	64
3	121
4	71

As we can see from the table above, the participants of this study consisted of 219 female, 78 male pre-service teachers from five different departments in Faculty of education, namely English Language Teaching, Turkish Language Teaching, Maths Teaching, Science Teaching, and Social Sciences Teaching. In addition, pre-service teachers from all classes (from first to fourth classes) were included in the study.

### *Data Collection Tools*

In order to investigate the cultural intelligence levels of pre-service teachers at Faculty of Education at Pamukkale University, and the differences in their cultural intelligence levels in terms of some demographic variables, Cultural Intelligence Scale (CQS) prepared by Ang et al. (2007) and adapted to Turkish by İlhan and Çetin (2014) was used. The scale which has a

7-point Likert type rating, has 20 items. The scale consists of 4 sub-dimensions called Metacognitive, Cognitive, Motivational and Behavioral dimensions.

Metacognitive dimension reflects whether individuals have control over the cultural information they have and the mental processes that they use to understand the cultural information they have. Cognitive dimension of the scale reflects the knowledge that individuals have about different cultures. Motivational dimension reflects the individuals' interest in interacting with people from different cultures and their belief in self-efficacy on this issue. Behavioral dimension reflects the ability of individuals to exhibit appropriate verbal or non-verbal behavior when encountering people with different cultural backgrounds.

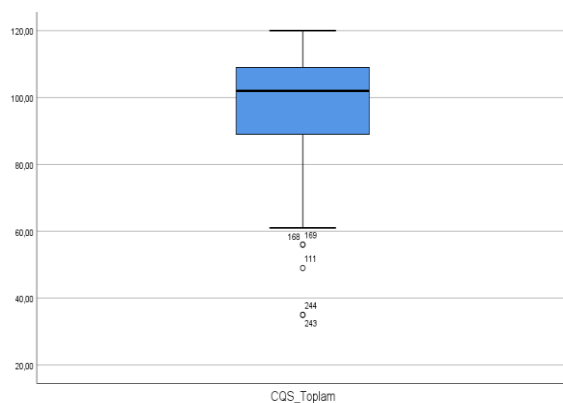
In order to obtain information about the demographic variables of the participants, personal information form questioning the participant's gender, age, graduated high school type, department, class, whether they have taken any intercultural lesson, number of different countries they have visited, and the length of abroad residence was used along with CQS

### **Data Analysis**

In order to analyze the data which were obtained from personal information forms and CQS, statistical analysis program, SPSS ver. 23 was used. First, descriptive statistics were applied to see the general frame of the data. Then, in order to examine the differences of cultural intelligence levels of participating pre-service teachers in terms of several demographic variables, t-tests, one-way ANOVA and correlation analyses were conducted.

### **BULGULAR**

The aim of this study was to investigate the cultural intelligence levels of pre-service teachers continuing their education in Faculty of Education at Pamukkale University, Denizli, Turkey, and to examine the differences in their cultural intelligence levels in terms of some demographic variables. Accordingly, descriptive, t-test, ANOVA and correlation analyses were conducted to reach the targeted results. First of all, boxplot was applied to see and eliminate any outliers, and then, in order to conduct the necessary analysis of the data, normality and homogeneity assumptions were analyzed to see if they were met or not.

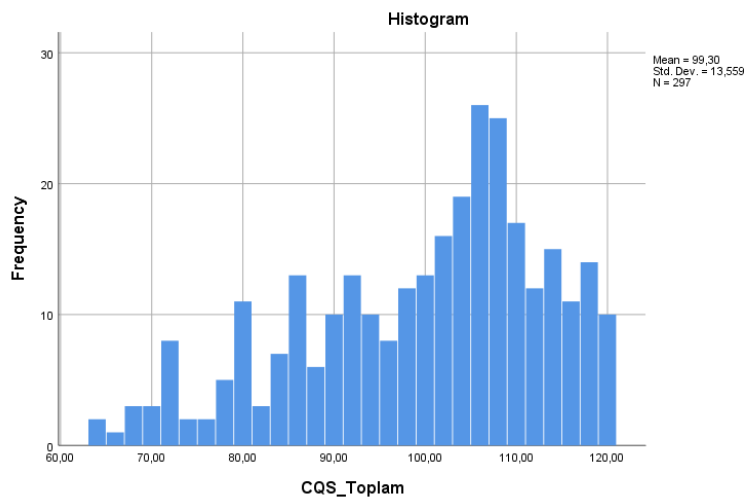


**Figure 1.** Boxplot

As it can be seen from the boxplot figure above, out of 303, data from six people were found to be outliers, thus, they were removed from the data before conducting other analyses. The total number of data were reduced to 297.

**Table 2.** Normality of the data

CQS_Total	Kolmogorov-Smirnov <sup>a</sup>			Skewness	Kurtosis
	Statistic	df	p		
	.109	297	.000	-0.61	-0.39



Normality of the data was tested by looking at skewness and kurtosis values. As the acceptable range of skewness and kurtosis below +1.5 and above -1.5 by Tabachnick and Fidell (2013), it can be said that the data were normally distributed. Besides, normality histogram shows a normal distribution of the data.

**Table 3.** Homogeneity of the data

		Levene Statistic	df1	df2	p
CQS_Toplam	Based on Mean	2.249	6	290	.039

When the results of the Levene test were investigated, it was seen that the homogeneity assumption was not met for this data.

### *The average cultural intelligence level of the participating pre-service teachers*

**Table 4.** Descriptive Statistics

		Statistic	Std. Error
CQS_Total	Mean	99.2997	.78679
	Median	103.0000	
	Std. Deviation	13.55922	
	Minimum	64.00	
	Maximum	120.00	

As the table above shows, the average cultural intelligence level of the participating pre-service teachers was 99, which can be regarded as average, as the minimum score that can be taken from the scale is 20, and the maximum score is 140.

### ***Analysis for the difference on the CQ levels of the participating pre-service teachers in terms of gender***

**Table 5.** Group statistics (Gender)

	Gender	N	Mean	Std. Deviation	Std. Error Mean
CQS_Total	Female	219	98.6849	13.23660	.89445
	Male	78	101.0256	14.37438	1.62758

**Table 6.** T-test analysis results for the difference in the CQ levels of the participating pre-service teachers in terms of gender

	Levene's Test for Equality of Variances		t-test for Equality of Means				
	F	Sig.	t	df	p	Mean Difference	Std. Error Difference
CQS_Toplam	1,529	.217	-1.311	295	.191	-2.34071	1.78574

It can be seen from the group statistics than the mean score of the male participants ( $\bar{x}=101$ ) was higher than that of the female participants ( $\bar{x}=99$ ). However, t-test results revealed that the difference is not statistically significant ( $t(295)=-1.31, p > .05$ ).

### ***Analysis for the difference on the CQ levels of the participating pre-service teachers in terms of age***

**Table 7.** Correlation analysis for the difference in the CQ levels of the participating pre-service teachers in terms of age

	1	2
1. Age	1	
2. CQS Total	.121*	1

\* $p < .05$

Correlation analysis conducted to examine the relationship between cultural intelligence levels of the participants and their age revealed that there was a small positive correlation between those variables ( $r = .121, p < .05$ ). This result means that as the age of the participants increase, their cultural intelligence levels increase as well.

### ***Analysis for the difference in the CQ levels of the participating pre-service teachers in terms of graduated high school types***

**Table 8.** Group Statistics (Graduated high school types)

	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
Science High School	26	92.19	14.32	2.81	64	118



Anatolian High School	205	99.84	13.89	.97	64	120
Social Sciences High School	5	110.2	6.496	2.91	100	118
Religious Anatolian High School	5	93.2	10.52	4.71	82	110
Vocational and Technical High School	9	104.11	11.48	3.83	80	118
Teacher Anatolian High School	28	98.61	13.098	2.48	71	119
Others	19	100.68	8.29	1.90	84	116
Total	297	99.29	13.56	.79	64	120

**Table 9.** One-way ANOVA results for the difference in the CQ levels of the participating pre-service teachers in terms of graduated high school types

CQS Total	Sum of Squares	df	Mean Square	F	p	Difference
Between Groups	2411.331	6	401.888	2.241	.039	Social Sciences-Science
Within Groups	52008.999	290	179.341			
Total	54420.330	296				

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

When Tables 8 is examined, it can be seen that the highest cultural intelligence mean score belongs to those who graduated from social sciences high schools ( $\bar{x}=110$ ). Then comes, respectively, Vocational and Technical High School ( $\bar{x}=104$ ), Others ( $\bar{x}=101$ ), Anatolian High School ( $\bar{x}=100$ ), Teacher Anatolian High School ( $\bar{x}=99$ ), Religious Anatolian High School ( $\bar{x}=93$ ), and finally, the lowest mean score belongs to those who graduated from science high schools ( $\bar{x}=92$ ). In order to see which groups differ significantly, Dunnet C test was performed since the data did not show a homogeneous distribution, and the results showed that there was only a statistically significant difference between the social sciences and science high schools ( $F(9,290)=2.241$ ,  $p < .05$ ).

#### ***Analysis for the difference in the CQ levels of the participating pre-service teachers in terms of number of different countries visited and duration of experience in abroad***

**Table 10.** Correlation analysis for the difference in the CQ levels of the participating pre-service teachers in terms of duration of experience in abroad

	1	2
1. Abroad Exp Duration	1	
2. CQS Total	.322	1

\*  $p < .05$

Correlation analysis conducted to examine the relationship between cultural intelligence levels of the participants and their duration of experience in abroad revealed that there was not a significant correlation between those variables ( $r = .322$ ,  $p > .05$ ).

**Table 11.** Correlation analysis for the difference in the CQ levels of the participating pre-service teachers in terms of number of different countries visited

	1	2
1. Different Country Number	1	
2. CQS Total	.221**	1

\*  $p < .05$ , \*\*  $p < .01$

Correlation analysis conducted to examine the relationship between cultural intelligence levels of the participants and number of different countries they have visited revealed that there was a significant medium correlation between those variables ( $r = .221$ ,  $p < .01$ ), which

means that as the number of different countries increases, the cultural intelligence level increases as well.

***Analysis for the difference in the CQ levels of the participating pre-service teachers in terms of whether they have taken an intercultural lesson***

**Table 12.** Group Statistics (IC lesson)

	IC Lesson	N	Mean	Std. Deviation	Std. Error Mean
CQS Total	Yes	55	101.85	12.69	1.71
	No	242	98.72	13.70	.88

**Table 13.** T-test Results for the difference in the CQ levels of the participating pre-service teachers in terms of whether they have taken an intercultural lesson

	Levene's Test for Equality of Variances		t-test for Equality of Means				
	F	<i>p</i>	t	df	<i>p</i>	Mean Difference	Std. Error Difference
CQS_Toplam	1.529	.217	1.552	295	.122	3.13554	2.02066

The results of the t-test analysis indicated that although the mean score of the participants who received an intercultural lesson was higher than those who did not, the difference was not statistically significant ( $t(295)=1.55$ ,  $p > .05$ ).

***Analysis for the difference in the CQ levels of the participating pre-service teachers in terms of their class***

**Table 14.** Group statistics (Class)

	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
1	40	94.40	13.78	2.18	64	120
2	64	95.62	16.12	2.01	64	120
3	121	100.69	11.9	1.08	65	120
4	71	103.13	12.24	1.45	70	120
Total	296	99.33	13.57	.79	64	120

**Table 15.** One-way ANOVA results for the difference in the CQ levels of the participating pre-service teachers in terms of their class

CQS_Total	Sum of Squares	df	Mean Square	F	<i>p</i>	Difference
Between Groups	3096.688	3	1032.229	5.881	.001**	4-1
Within Groups	51254.525	292	175.529			
Total	54351.213	295				

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

When Table 14 is examined, we can see that the participants' cultural intelligence mean scores increase as their class level increases. In order to see which groups differ significantly, Dunnett C test was performed as the data did not show a homogeneous distribution, and the results revealed that although there was a systematic increase in the mean scores as the class level got higher, the only statistically significant difference was between class 4 (seniors) and 1 (freshmen) ( $F(3,292) = 5.881$ ,  $p < .01$ ).

**Analysis for the difference in the CQ levels of the participating pre-service teachers in terms of their department**

**Table 16.** Group statistics (Department)

	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
English Language Teaching	131	103.45	10.90	.95	70	120
Turkish Language Teaching	23	93.61	15.72	3.28	64	120
Social Sciences Teaching	25	101.48	11.66	2.33	76	118
Science Teaching	32	96.63	15.89	2.81	67	119
Maths Teaching	86	94.86	14.31	1.54	64	120
Total	297	99.30	13.56	.79	64	120

**Table 17.** One-way ANOVA results for the difference in the CQ levels of the participating pre-service teachers in terms of their department

CQS_Total	Sum of Squares	df	Mean Square	F	p	Difference
Between Groups	5044.359	4	1261.090	7.458	.000	English Language Teaching – Maths Teaching
Within Groups	49375.971	292	169.096			
Total	54420.330	296				English Language Teaching – Turkish Language Teaching

The results above in Table 16 show that the participants from the department of English Language Teaching had the highest mean scores on the Cultural Intelligence Scale ( $\bar{x} = 103$ ), followed by, respectively, Social Sciences Teaching ( $\bar{x} = 101$ ), Science Teaching ( $\bar{x} = 97$ ), Maths Teaching ( $\bar{x} = 95$ ), and finally Turkish Language Teaching ( $\bar{x} = 94$ ) departments. In order to see which groups, differ significantly, Dunnett C test was performed as the data did not show a homogeneous distribution, and the results demonstrated that the statistically significant differences were between English Language Teaching - Maths Teaching, and English Language Teaching – Turkish language Teaching departments.

## DISCUSSION

This study aimed at investigating the cultural intelligence levels of pre-service teachers continuing their education in Faculty of Education at Pamukkale University, and examining the differences in their cultural intelligence levels in terms of some demographic variables such as gender, age, experience in abroad, department, class level, and etc. The results of the analyses showed that the cultural intelligence levels of the participating pre-service teachers were average. Although it seems that the existing average level can be increased, it can still be regarded as a good result, as studies in the literature indicate lower results. For instance, Spithourakis, Karatzia-Stavlioti and Roussakis (2009) investigated intercultural sensitivity of elementary education students and found that that they feel they are not well enough prepared by their training for future educational work that might demand intercultural sensitivity. Moreover, Olaya and Rodríguez (2013) explored pre-service English teachers' perceptions and attitudes toward the aspects of culture and intercultural competence addressed in their English classes in the undergraduate programs and revealed that pre-service teachers are mainly taught elements of surface culture and lack full understanding of intercultural competence.

When we examine whether male and female participants' cultural intelligence levels were different or not, analysis revealed no significant difference between those. While this result is consistent with the results of Sarıçoban and Öz's study (2011) where they also found no different intercultural competence between genders, there is a contrast with the results of

Khodadady and Ghahari's study (2011) in which they found that the female participants had higher cultural intelligence levels than the males. This contradiction can result from different cultural backgrounds as the present study and the study with similar results was conducted in Turkish context while the other study was conducted in Iranian context.

As for the relationship between cultural intelligence levels and the age of the participants, the results showed a small level positive correlation, which means that as the ages of the participating pre-service teachers increase, their cultural intelligence levels increase as well. Besides, when the results of the analysis related to the difference in CQ levels of the participants in terms of their class levels are examined, it can also be seen that the mean scores got higher as the class they were in increases as well. In addition, one-way ANOVA analysis revealed a significant difference between seniors and freshmen. Those two findings confirm each other, and we can conclude that as people get older, gain experience and receive more education, their CQ levels can get higher. Similarly, in their research, Khodadady and Ghahari (2011) found that the graduate participants had higher CQs than the undergraduates, which is supported by the results of the present study.

When the results related to participants' CQ levels and the type of high school they graduated are examined, it can be seen that the highest mean scores belong to those from social sciences high schools, and the lowest scores belong to those who graduated from science high schools. Besides, the difference between graduates of those schools was found to be statistically different though differences among other school types were not significant. This significant difference between social sciences high schools and science high schools graduates may be resulted from the subjects they focused on while they received their education at those schools. As the names suggest, students in social sciences high schools focus more on social topics such as geography, history, philosophy while science high school students focus more on topic related to science such as physics, chemistry, biology, and maths. The change of the focus may influence their intercultural awareness and make them have culturally higher intelligence.

The results of analysis conducted to see whether there is a correlation between participants' CQ levels and their duration of experience abroad indicated no significant relation, which means that the length of time spent abroad does not have a relationship with their CQ levels. On the other hand, analysis conducted to explore the relationship between their CQ levels and number of different countries they have been indicated medium level positive correlation, which can be interpreted as, the more countries they visited, the higher their CQ level is. As a result, it can be said that although the duration of the stay does not matter, seeing a number of different countries and cultures seems to increase CQ levels of the participants.

When we examine the results related to participating pre-service teachers' CQ levels and their department, we can see that the participants from English Language Teaching had the highest mean scores while Turkish Language teaching had the lowest mean scores. This difference was also found statistically significant. It can be related to the languages they study in their education. Since pre-service teachers in Turkish Language Teaching focus on their own language in their education, they may have less opportunity to see and explore different countries and cultures, which may inhibit an increase on their intercultural awareness. However, the situation is the opposite for the participants from English language teaching.

## CONCLUSION AND IMPLICATIONS

Findings and implications of the study should be considered with its assumptions and limitations. First of all, it is assumed that the measuring instruments used in the research are valid and reliable. In addition, it is assumed that the student teachers participating in the research responded sincerely and objectively to the questionnaires and the interview questions. Secondly, this study invited a group of pre-service teachers studying at Pamukkale University. Therefore, the findings may not be generalized to other settings. Other representative samples may give disparate information about the issue. Finally, the number of the participants is limited to the pre-service teachers at Pamukkale University. Thus, there may be inequalities in terms of the numbers of participants or different variables.

According to the results of the study, number of countries visited seemed to increase the participants' levels of cultural intelligence. Therefore, international programs and projects should be conducted and encouraged by universities and similar educational institutions. In addition, studying social studies and different languages were found to be important for improving the cultural intelligence levels of the participants, which indicates that starting with young ages, students should be introduced to social sciences and different foreign languages with an emphasis on multiculturalism and the importance of having intercultural awareness. Finally, at higher education levels, the main interest of study and consequently its content was revealed to develop pre-service teachers CQ levels. Thus, authorities and program developers should be aware of this fact and include topics which can enhance the students' cultural intelligences as in today's global world; it is an important merit to be successful, effective and competent in various areas.

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## GENİŞLETİLMİŞ ÖZET

### *Öğretmen Adaylarının Kültürel Zeka Düzeyleri*

#### **Giriş**

İnsan yaşamında önemli bir yetkinlik olarak değerlendirilen zekanın, ne olduğu ve nasıl tanımlandığı uzun yıllar boyunca eğitimciler başta olmak üzere insan bilimcilerin üzerinde çalıştığı bir konu olmuştur. Zeka ile ilgili ilk kavramsallaştırmalarda, zeka tek bir faktör olarak kabul edilmiş ve zekanın sadece akademik boyutlarına odaklanılmıştı (Ramis ve Karistina, 2010). Ancak, Gardner'ın Çoklu Zeka kuramı ile birlikte, zekanın tek faktörlü olduğu görüşüne karşı çıkmış; sözel ve matematiksel yönlerinin yanı sıra, sözel anlama, kelime akıcılığı, akıl yürütme, bellek ve algısal hız gibi çok faktörlü bir yapıya sahip olduğu görüşü benimsenmeye başlanmıştır (Bacanlı, 2000). Gardner Çoklu Zeka kuramını tanıttıktan sonra, duygusal zeka (Goleman, 1995), pratik zeka (Sternberg ve diğ., 2000) ve ekolojik zeka (McCallum, 2008) gibi farklı zeka alanları, farklı eğitimciler ve psikologlar tarafından önerilmiştir. Bu önerilen zeka alanlarından biri, bazı bireylerin neden farklı kültürlerden bireylerle etkileşimde daha başarılı oldukları sorusuna yanıt olarak ortaya çıkan kültürel zekadır (Alon & Higgins, 2005; Earley, 2002).

Kültürel zeka (CQ), bireyin davranışlarını etkileşime girdikleri kültürlerin gereksinimlerine göre ayarlama, farklı kültürlerden bireylerle etkili iletişim kurma ve kültürel farklılıklara uyum sağlama kapasitesi olarak tanımlanır (Ang, Van Dyne ve Koh , 2008). Farklı toplumlardan insanların ve dolayısıyla farklı kültürlerin eğitim, yaşam standartlarının yükselmesi, ticaret, pazarlama, politika vb. nedenlerle birlikte yaşadığı günümüzün küresel dünyasında; yüksek kültürel zeka düzeyine sahip olmak daha da fazla önem kazanmıştır. Bunlar arasında en önemli nedenlerden biri de eğitimidir. Bu nedenle, üniversite öğrencilerinin ve personelinin kültürlerarası duyarlılığa ve yeterliliğe sahip olması, yani böyle bir ortamda çalışanların yüksek kültürel zekaya sahip olması çok önemlidir. Üniversitelerde ve çok kültürlü ortamlarda sahip olunması beklenen kültürlerarası iletişim ve duyarlılık konusunda geniş çalışmalar olmasına rağmen, sınırlı sayıda çalışmada, üniversitelerde kültürel zeka düzeyinin vurgulandığı görülmektedir. Bu nedenle, bu çalışmada, Pamukkale Üniversitesi Eğitim Fakültesi'nde eğitim gören öğretmen adaylarının kültürel zeka düzeylerini incelemek ve kültürel zeka düzeyleri arasında bazı demografik değişkenlere göre farklılaşma durumunu araştırmak amaçlanmıştır.

#### **Yöntem**

Bu çalışmada, anket modeline dayanan betimleyici tarama yöntemi kullanılmıştır. Büyüköztürk'e (2007) göre, betimleyici çalışmalar geçmişte var olan veya hâlâ devam eden bir durumu tanımlamayı amaçlayan araştırma yaklaşımlarıdır. Katılımcılar, 2019-2020 öğretim yılı bahar döneminde Pamukkale Üniversitesi Eğitim Fakültesi'nde öğrenim gören öğretmen adaylarından oluşmaktadır. Araştırmada uygun örnekleme yöntemi (Creswell, 2009) kullanılmış ve İngilizce Öğretmenliği, Türkçe Öğretmenliği, Matematik Öğretmenliği, Fen Bilgisi Öğretmenliği ve Sosyal Bilimler Öğretmenliğinde öğrenim gören öğretmen adaylarına çevrimiçi anketlerle ulaşılmıştır. Bu bölümlerden toplam 303 öğretmen adayı çalışmaya katılmıştır.

Öğretmen adaylarının kültürel zeka düzeylerini ve kültürel zeka düzeylerinin bazı demografik değişkenlere göre farklılıkları incelemek amacıyla Ang ve diğerleri (2007) tarafından

geliştirilen ve İlhan ve Çetin (2014) tarafından Türkçe'ye uyarlanan Kültürel Zeka Ölçeği kullanılmıştır. Katılımcıların demografik değişkenleri hakkında bilgi edinmek için katılımcının cinsiyetini, yaşını, mezun olunan lise türünü, bölümünü, sınıfını, herhangi bir kültürlerarası ders alıp almadığını, ziyaret ettikleri farklı ülke sayısını ve yurt dışında ikamet süresini soran bir Kişisel Bilgi Formu kullanılmıştır. Bunlardan elde edilen bulgular, SPSS 23 programı kullanılarak analiz edilmiştir. Verilerin analizinde ANOVA, bağımsız örneklem arası t-testi ve korelasyon analizi kullanılmıştır.

### ***Bulgular ve Tartışma***

Analiz sonuçları, öğretmen adaylarının kültürel zeka düzeylerinin ortalama olduğunu göstermiştir. Kültürel zeka düzeylerinin cinsiyete göre farklılaşma durumu incelendiğinde erkek ve kadın öğretmen adayları arasında anlamlı bir fark bulunamamıştır. Bu sonuçlar, kadın katılımcıların erkeklerden daha yüksek kültürel zeka düzeyine sahip olduğunu gösteren Khodadady ve Ghahari (2011) tarafından yapılan çalışma sonuçları ile farklılık göstermektedir. Bu çelişki, katılımcıların farklı kültürel geçmişe sahip olmalarından kaynaklı olabilir.

Kültürel zeka düzeyleri ile katılımcıların yaşları arasındaki ilişki korelasyon analizleri ile incelenmiş ve düşük düzeyde ancak anlamlı ve pozitif yönde bir korelasyon bulunmuştur. Bu bulgular, öğretmen adaylarının yaşları arttıkça kültürel zeka düzeylerinin de arttığı şeklinde yorumlanabilir. Ayrıca, katılımcıların kültürel zeka düzeylerinin sınıf düzeylerine göre farklılaşma durumu tek yönlü ANOVA analizi ile incelenmiş ve sınıf düzeyi yükseldikçe kültürel zeka puanlarının arttığı görülmüştür. Ayrıca dördüncü ve birinci sınıf öğrencileri arasında dördüncü sınıf öğrencileri lehine bir fark olduğu saptanmıştır. Bu iki bulgu birbirini destekler niteliktedir ve insanlar yaşlandıkça, deneyim kazandıkça ve daha fazla eğitim aldıkça kültürel zeka düzeylerinin yükselbileceği sonucuna çıkarılabilir.

Katılımcıların kültürel zeka düzeylerinin mezun oldukları lise türüne göre farklılaşma durumuna ilişkin sonuçlar incelendiğinde, en yüksek ortalama puanlarının sosyal bilimler lisesi mezunlarında, en düşük ortalama puanların ise fen lisesi mezunlarında olduğu görülmüş ve bu okulların mezunları arasındaki fark istatistiksel olarak anlamlı bulunmuştur. Öğretmen adaylarının kültürel zeka düzeylerinin bölümlere göre farklılaşma durumuna ilişkin sonuçlar incelendiğinde, İngilizce Öğretmenliği bölümü öğrencileri en yüksek ortalama puanlara sahip iken, Türkçe öğretmenliği bölümü öğrencileri ise en düşük ortalama puanlara sahip olduğu görülmüş ve bu fark istatistiksel olarak anlamlı bulunmuştur.

Son olarak, katılımcıların kültürel zeka seviyeleri ile yurtdışındaki deneyim süreleri arasındaki ilişkiye yönelik korelasyon analizi incelenmiş ve anlamlı bir ilişki bulunamamıştır. Bu sonuçlar, yurtdışında geçirilen sürenin kültürel zeka seviyeleri ile bir ilişkisi olmadığı şeklinde değerlendirilebilir. Diğer taraftan, kültürel zeka düzeyleri ile ziyaret edilen farklı ülke sayıları arasındaki ilişki incelendiğinde, pozitif yönde orta düzeyde bir korelasyon belirlenmiştir. Sonuç olarak, yurt dışında geçirilen süre önemli olmasa da, birçok farklı ülke ve kültürün görülmesinin katılımcıların kültürel zeka düzeylerini artırdığı değerlendirilmesi yapılabilir.