

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

Ceren KARAKOÇ¹ and Gökhan AKSU²

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

Article History Article Type

Received: 02.04.2024
Research article

Accepted: 10.12.2024

Recommended Citation:

Karakoç, C., & Aksu, G. (2024). Development of an intercultural awareness scale for students in an educational environment with different cultures: A study on validity and reliability. *International Journal on New Trends in Education and Their Implications (IJONTE)*, 15(2), 142-156.

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

¹ Corresponding Author: Ceren KARAKOÇ, Aydın Adnan Menderes University, Turkey, Faculty of Educational Sciences, Curriculum and Instruction, cerenkarakoc123.ck@gmail.com, ORCID: 0009-0006-8621-7252

² Assoc. Prof. Dr. Gökhan AKSU, Aydın Adnan Menderes University, Turkey, Faculty of Educational Sciences, Measurement and Evaluation in Education, gokhanaksu@adu.edu.tr, ORCID: 0000-0003-2563-6112

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, 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
		Eigen value	2,728	1,214	1,092
		Variance Explained	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

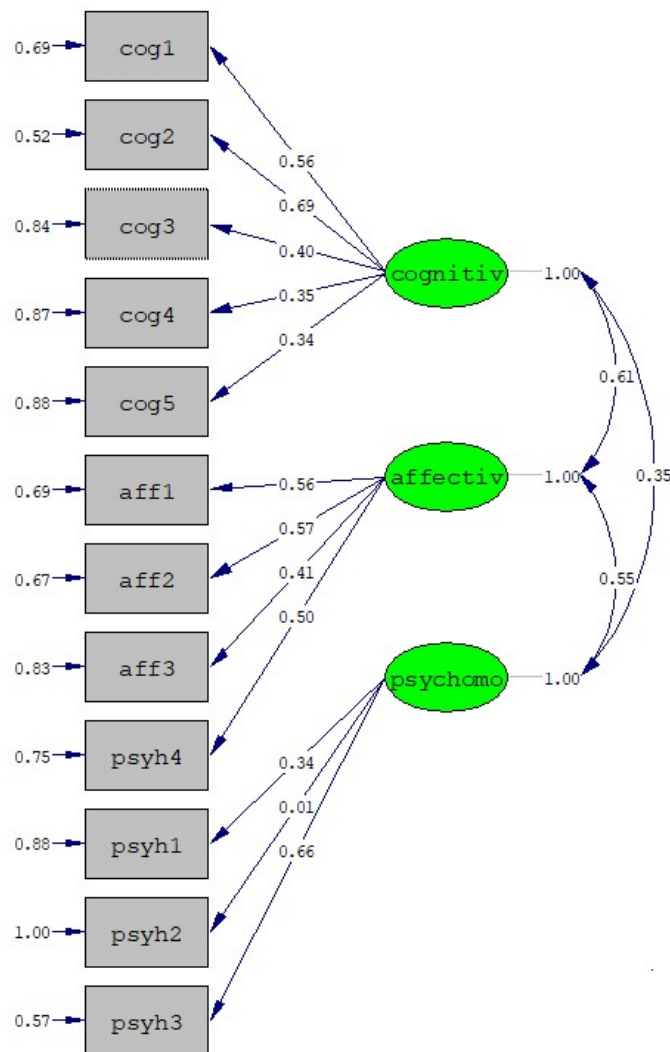
Indexes	Perfect Fit	Acceptable Fit	Results
χ^2/Sd	$0 \leq \chi^2/Sd < 2$	$2 < \chi^2/Sd \leq 5$	2.61
RMSEA	$0 \leq RMSEA \leq .08$	$.08 < RMSEA \leq 1.00$.055
CFI	$.95 \leq CFI \leq 1.0$	$.90 \leq CFI < .95$.93
NFI	$.95 \leq NFI \leq 1.00$	$.90 \leq NFI \leq .95$.89
NNFI (TLI)	$.95 \leq NNFI (TLI) \leq 1.00$	$.90 \leq NNFI (TLI) \leq .95$.91
RMR	$0 \leq RMR \leq .08$	$.08 < RMR \leq 1.00$	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 χ^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

References

- Aksu, G., Eser, M. T., & Güzeller, C O. (2017). *Açımlayıcı ve doğrulayıcı faktör analizi ile yapısal eşitlik modeli uygulamaları (Structural equation modelling applications with exploratory and confirmatory factor analysis)*. Detay Publishing.
- Aliyev, R. (2011). *Investigation of the first interaction perceptions and acculturation levels of higher education students from different cultures in educational environments* (Unpublished doctoral thesis). Ankara University.
- Ay, E., Kavuran, E., & Türkoğlu, N. (2018). Intercultural communication apprehension scale (prica): Validity and reliability study in Turkish. *International Journal of Caring Sciences*, 11(3), 1638-1646.
- Ayaz, M. F. (2016). Multiculturalism perception scale: Validity and reliability study. *Electronic Journal of Social Sciences*, 15(57), 463-471. doi:10.17755/esosder.11595
- Aydeniz, S., & Sarıkaya, B. (2021). Teachers' opinions on the problems and solution suggestions in the education of migrant children. *Journal of National Education*, 50(1), 385-404. <https://doi.org/10.37669/milliegitim.959700>
- Başbay, A., Kağnıcı, D. Y., & Başbay, M. (2019). Examining the relationship between teachers' multicultural competence perceptions and moral maturity/perception and personality traits. *Primary Education Online*, 17(3). <https://doi.org/10.17051/ilkonline.2018.466317>
- Baykul, Y. (2010). *Eğitimde ve psikolojide ölçme: Klasik test teorisi ve uygulaması (Measurement in education and psychology: Classical test theory and practice)* (2nd ed.). Pegem Akademi.

- Bentler, P. M. (1990). Comparative Fit Indexes in Structural Models. *Psychological Bulletin*, 107, 238-246. <http://dx.doi.org/10.1037/0033-2909.107.2.238>
- Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88, 588-606.
- Bland, J., & Altman D. (1997). *Notes on statistics: Cronbach's alpha*. BMJ.
- Bozkaya, H. (2020). Multicultural classroom environment and belonging. *Journal of Çankırı Karatekin University Karatekin Faculty of Literature*, 8(2), 245-271.
- Burak, D., Amaç, Z., Doğan, Y., Duran, S., Yıldırım, F., & Uzun, H. (2020). Intercultural understanding scale of primary and secondary school teachers: Adaptation and application study. *International Journal of Turkish Literature Culture Education (TEKE)*, 9(1), 354-376. <https://dergipark.org.tr/tr/pub/teke/issue/53329/710381>
- Büyüköztürk, Ş. (2018). *Sosyal bilimler için veri analizi el kitabı (Handbook of data analysis for social sciences)*. Pegem Publishing.
- Chen, G. M., & Starosta, W. J. (1998). *Foundations of intercultural communication*. Allyn and Bacon.
- Chen, G. M., & Starosta, W. J. (1996). Intercultural communication competence: A synthesis. *Communication Yearbook*, 19, 353-384.
- Çokluk, Ö., Şekercioğlu, G., & Büyüköztürk, Ş. (2018). Sosyal bilimler için çok değişkenli istatistik: SPSS ve LISREL uygulamaları (*Multivariate statistics for social sciences: SPSS and LISREL applications*) (5th Edition). Pegem Publishing.
- Crocker, L., & Algina, J. (1986). *Introduction to classical and modern test theory*. Harcourt Brace Jovanovich.
- Davis, L. L. (1992). Instrument review: Getting the most from a panel of experts. *Applied Nursing Research*, 5, 194-197.
- Dawson B, Trapp R. G. (2001). Probability & related topics for making inferences about data. Basic & Clinical Biostatistics (3rd Edition). *Lange medical Books/McGraw-Hill Medical Publishing Division*, 69-72.
- Denson, N., Ovenden, G., Wright, L., Paradies Y., & Priest, N. (2017). The development and validation of intercultural understanding (ICU) instruments for teachers and students in primary and secondary schools. *Intercultural Education*, 28(3), 231-249. doi:10.1080/14675986.2017.1333346.
- DeVellis R. (2003). *Scale development: Theory and applications*. Sage.
- Diller, J. V. (2007). *Cultural diversity: A primer for the human services (3rd ed.)*. Thomson Brooks.
- Ece, T. (2019). The Effect of IB Programmes on the Intercultural Awareness Levels of Teachers and Administrators (Master's Thesis). Maltepe University.
- Ergun, D. (2000). *Kimlikler kısılcacında ulusal kişilik (National personality in the grip of identities)*. Imge Bookstore Publications.
- Erol, M., Özdemir, F., & Erol, A. (2021). The reasons behind migrant children's lost generation according to primary school teachers. *Journal of National Education*, 50(1), 475-496. <https://doi.org/10.37669/milliegitim.930329>
- Gençtanırım, D. (2014). Risky behaviours scale university form: Guarantee and reliability studies. *Journal of Measurement and Evaluation in Education and Psychology*, 5(1), 24-34. <https://doi.org/10.21031/epod.67191>
- Gezer, M., & Şahin, İ. F. (2017). Examining the relationship between attitude towards multicultural education and cultural intelligence with decoy. *Journal of Eastern Geography*, 22(38), 173-188. <https://doi.org/10.17295/ataunidcd.323139>
- Giddens, A. (1995). *Konsequenzen der modern*. Suhrkamp.

- Gültekin, S. (2017). *Item types to be used in tests, preparation principles and scoring*. R. N. Demirtaşlı (Ed.), *Eğitimde ölçme ve değerlendirme (Measurement and Evaluation in Education)* (4th edition). (145-222). Anı Publishing.
- Güvendir, M. A., & Özkan, Y. Ö. (2015). An investigation of articles on scale development and adaptation in scientific journals published in the field of education in Turkey. *Electronic Journal of Social Sciences*, 14(52), 23-33.
- Hair, J. F., Anderson, R. E., Tatham, R. L. & Black, W. (1998). *Multivariate data analysis* (5th ed.). Prentice Hall.
- Hutcheson, G. & Sofroniou, N. (1999). *The multivariate social scientist*. Sage.
- Işık, M., Bahat, İ., Öncüler, İ., & Özdemir, A. (2021). Investigation of the experiences of immigrant students living in Beylikdüzü district of Istanbul. *Journal of National Education*, 50(1), 925-950. <https://doi.org/10.37669/milliegitim.951813>
- Kanten, P. & Arda, B. (2020). Methodological analysis of scale development studies in the fields of management and organisational behaviour. *Journal of Business and Economics Research* (2), 581-590.
- Karabuğa Yakar, H., & Ecevit Alpar, Ş. (2017). Determining the reliability and validity of intercultural awareness and intercultural effectiveness scales. *Journal of Human Sciences*, 14(3), 2748-2761. doi:10.14687/jhs.v14i3.4885
- Karasar, N. (2011). *Bilimsel araştırma yöntemleri (Scientific research methods)* (10th ed.). Nobel Publication Distribution.
- Karataş, K., & Oral, B. (2017). Validity and reliability study of cultural values sensitive education readiness scale. *Journal of Educational Sciences Research*, 7(2), 257-268.
- Kartal, Z., & Kartal, Z. (2007). Globalisation with conceptual and historical aspects. *Eskişehir Osmangazi University Journal of Social Sciences*, 8(2), 251-264. <https://dergipark.org.tr/tr/pub/ogusbd/issue/10992/131549> on 13.01.2022.
- Kartarı, A. (2001). *Farklılıklarla yaşamak: Kültürlerarası iletişim (Living with differences: Intercultural communication)*. Ürün Publications.
- Kline, R. B. (2005). *Principles and practice of structural equation modelling* (2nd ed.). Guilford.
- Kline, R. B. (2010). *Principles and Practice of Structural Equation Modelling* (3rd ed.). Guilford.
- Nunnally, J. & Bernstein, L. (1994). *Psychometric theory*. McGraw-Hill Higher.
- Ogbu, J. U. (1992). Understanding cultural diversity and learning. *Educational Researcher*, 21(8), 5-14.
- Orcan, F. (2018). Exploratory and confirmatory factor analysis: Which one to use first? *Journal of Measurement and Evaluation in Education and Psychology*, 9(4), 414-421. <https://doi.org/10.21031/epod.394323>
- Perry, L. B., & L. Southwell. (2011). Developing intercultural understanding and skills: Models and approaches. *Intercultural Education*, 22(6). 453-466.
- Rengi, Ö., & Polat, S. (2014). Classroom teachers' perceptions of cultural differences and intercultural sensitivity. *Journal of World of Turks*, 6(3), 136-156.
- Rozaimie, A., Shuib, A., Ali, A., Oii, B., & Siang, C. (2011). Multicultural awareness for better ways of life: A scale validation among Malaysian undergraduate students. (Research Proceeding). 2nd International Conference on Business and Economic Research (2nd Icerb 2011) Proceeding.
- Sakız, H. (2016). Migrant children and school cultures: an integration study. *Journal of Migration*, 3(1), 65-81. <https://doi.org/10.33182/gd.v3i1.555>

- Sarı, E., & Özdil, T. (2022). Adaptation of intercultural competence scale into Turkish. *Manisa Celal Bayar University Journal of Social Sciences*, 20(4), 219-232. <https://doi.org/10.18026/cbayarsos.1100376>
- Seçer, İ. (2015). *SPSS ve LISREL ile pratik veri analizi (Practical data analysis with SPSS and LISREL)*. Ankara.
- Selçuk, O., Güzel, B., & Buz, S. (2021). Evaluating asylum-seeker children's barriers to education in turkey through phenomenological approach. *National Education Journal*, 50(1), 359-383. <https://doi.org/10.37669/milliegitim.960459>
- Şentuna, A. B. (2011). Investigation of the differences that 48-60 month-old children receiving preschool education will create in their perspectives towards different cultures in the world when they recognise different cultures (Unpublished master's thesis). Marmara University.
- Simsek, O.F. (2007). *Yapısal Eşitlik Modellemesine Giriş - Temel İlkeler ve LISREL Uygulamaları (Introduction to structural equation modelling, basic principles and LISREL applications)*. Ekinoks.
- Spitzberg, B. H., & Changnon, G. (2009). Conceptualising intercultural competence. D. K. Deardorff (Ed.). *The SAGE handbook of intercultural competence* (pp. 2-52). Sage.
- Tabachnick, B.G., Fidel, L.S. (2013). *Using multivariate statistics* (6th ed.). Pearson.
- Tavşancıl, E. (2006). *Tutumların ölçülmesi ve SPSS ile veri analizi (Measurement of attitudes and data analysis with SPSS)*. Nobel Publication Distribution.
- Taylor, M. & Fox, D. L. (1996). Valuing cultural diversity. *The English Journal*, 85(8), 87-90.
- Tekin, H. (2000). *Eğitimde ölçme ve değerlendirme (Measurement and evaluation in education)*. Yargı Publications.
- Temel Eginli, A. (2012). The importance of cultural diversity trainings in acquiring intercultural competence. *Öneri Journal*, 9(35), 215-227. <https://dergipark.org.tr/tr/pub/maruoneri/issue/17898/187793> on 13.01.2022.
- Tezbaşaran, A. (2008). Likert tipi ölçek hazırlama kılavuzu (*Likert type scale preparation guide*). Turkish Psychologists Association Publications.
- Toprak, G. (2008). Reliability and validity study of teacher multicultural attitude survey (Unpublished master's thesis). Gaziosmanpaşa University.
- Turkey Migration Report. (2019). Republic of Turkey ministry of interior general directorate of migration management. <https://www.goc.gov.tr/raporlar3>
- UNICEF (2017). Preventing a lost generation in Turkey. http://www.unicef.org.tr/files/bilgimerkezi/doc/Children%20of%20Syria_01.2007_TR.pdf.
- Üstün, E. (2011). Factors affecting pre-service teachers' intercultural sensitivity and ethnocentrism levels (Unpublished Master's Thesis). Yıldız Technical University.
- Walton, J., Priest, N. & Paradies, Y.(2013). Identifying and developing effective approaches to foster intercultural understanding in schools. *Intercultural Education*, 24(3), 181- 194.
- Yakar, H., & Alpar, Ş. (2017). Determining the reliability and validity of intercultural awareness and intercultural effectiveness scales. *International Journal of Human Sciences*, 14(3), 2748-2761. doi:10.14687/jhs.v14i3.4885
- Yıldırım, S., & Tezci, E. (2017). Teachers' conceptual knowledge, knowledge levels and in class applications for multicultural education: Developing a scale. *Electronic Turkish Studies*, 12(18), 719-736. <http://dx.doi.org/10.7827/TurkishStudies>
- Yong, A. G., & Pearce, S. (2013). A beginner's guide to factor analysis: Focus on exploratory factor analysis. *Quantitative Methods for Psychology*, 9, 79-94. <https://doi.org/10.20982/tqmp.09.2.p079>

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:**.....

MADDELER	1-Strongly Disagree	2-Slightly Agree	3-Strongly Agree
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.			

