International Journal on Lifelong Education and Leadership (2019), 5(2)

Creating Intergenerational Space in Schools: A Scale Development Study

Soner POLAT[1], Gülşah HİÇYILMAZ[2]

[1], Professor, Faculty Member, Kocaeli University, Department of Educational Sciences, ORCID ID: 0000-0003-2407-6491
[2], Classroom Teacher, PhD student, Kocaeli University, Educational Administration, Inspection, Planning and Economics Program, ORCID ID: 0000-0003-3147-3217
Email: spolat2002@yahoo.com, gulsah_serifoglu@hotmail.com,

Abstract

Today's organizations require individuals from different age groups to work together due to factors such as the continuation of work by older individuals and the recruitment of young individuals. At the same time organizations, due to the developing technology and increasing competition conditions, are forced to become an organization that renews itself, follows the developments, produces new unique information, in short, learns. One of the ways to become a learning organization is through intergenerational learning. Intergenerational learning is the ability of employees of different generations to apply what they learn from each other. The most important step of this is to create spaces for teachers from different generations to come together. This study was conducted with the aim of developing a reliable and valid scale to identify the spaces where teachers from different generations coexist. In this context, considering the data of the relevant literature and interviews with teachers, a pool of 45 items was created. Expert opinions were taken to ensure scope validity and two items were revised. This scale form was applied to 90 primary school teachers working in Derince district of Kocaeli province in the spring term of 2018 - 2019 academic year. All of the scales were returned and 12 were excluded from the evaluation due to errors in the coding. Research data were obtained from 78 teachers. For the validity studies of the scale, exploratory and confirmatory factor analyzes were performed. According to exploratory factor analysis, the scale consists of four sub-dimensions and 25 items: socio-cultural activities, intergenerational sensitivity, educational meetings and educational activities. The total item correlations in the scale were between 0.571 and factor loads between 0, 420 and 0, 834. It explained 72.59 of the total variance. After the exploratory factor analysis, the fit indices of the scale were found to be sufficient and the four-dimensional structure was confirmed according to the confirmatory factor analysis (X^2/df=1,809, RMSEA=,103 SRMR=,764 TLI=,852 CFI=,871 GFI=,706). The reliability of the scale was examined by Cronbach's Alpha internal consistency coefficient. As a result of the reliability analysis, the internal consistency coefficient was α = .96. The results of the study showed that Intergenerational Space Scale is a valid and reliable measurement tool with sufficient psychometric properties. The intergenerational space scale can be used in research on bringing together teachers from different generations in schools.

Keywords: Intergenerational Space, Scale Development, Teacher.

Introduction

Developing technology, comfortable living conditions, declining birth rates, economic developments, factors such as the retirement age increase young and old employees in organizations to work together. At this point, it would be appropriate to make a definition of the generation first. The concept of generations was first described by Manheim as a group of people who share similar social and historical events throughout their lives (1952). Generations have been classified by many researchers and the most widely used classification used in this study is the classification made by William Strauss and Neil Howe. Strauss and Howe examined generations under five groups; silent generation (1925-1945), baby boomer generation (1946-1964), X generation (1965-1980), Y generation (1981-2000) and Z generation (2001-2021) (Atak, 2016: 9). Every generation has different learning and working styles. All style types are important for organizations.

Today's most valuable capital is human capital that develops with knowledge. For this reason, organizations are looking for ways to transfer information from employees to other employees in order to gain superiority to their competitors. Thus, organizations take steps towards becoming a learning

Received: 10.09.2019
Accepted: 21.11.2019
Published: 31.12.2019

organization by taking and re-creating different information. The learning organization has been defined as the construction of the organization, the processing of information, the organization of activities and the development of individuals in these activities (Bowles, 1993). The learning organization is of great importance for today's organizations. There are several ways to become a learning organization.

Organizations are the schools where education and training services are provided. In addition, schools have gained importance with their role in knowledge management, their position to promote innovative practices and prevent information loss (Thambi and O'Toole, 2012). Edge (2014) stated that today there are three generations in education organizations: Baby Boomers (1946-65), X generation (1966-80) and Y generation (1981-2003). It has been acknowledged for the researches (Gerpott, Lehmann-Willenbrock and Voelpel, 2016; Williams and O'reilly, 1998) in which teachers from different generations contribute with different knowledge, skills and expertise. One of the ways in which educational organizations can show the characteristics of a learning organization is to bring together teachers from different generations. Geeraerts et al. (2016) stated that different generation teachers perceive different types of knowledge, while young teachers are seen as a source of information for innovative teaching methods and computer business technologies skills, whereas teachers older than 50 are associated with classroom management skills and subject knowledge. Each generation has superior and weaknesses as well as the ability to teach and learn from one another. This situation reveals the phenomenon of intergenerational learning (Polat, Okçu and Çelik, 2019).

Intergenerational learning is defined as an effective way of learning the learning styles, values and motivations of individuals of different ages together (Ropes, 2013). Intergenerational learning in schools is basically conceptualized as an interactive process between different generation teachers resulting in one or two sides learning (Novotni and Brücknerová, 2014; Ropes, 2011). This necessitates the gathering of teachers from different generations in schools, in other words, the existence of intergenerational spaces.

The intergenerational field is generally thought to be the design of the environment by specifying the aim of facilitating and increasing the relations between members of different generations (young or old) belonging to a group (Vanderbeck and Worth, 2015). Spaces and places are not only stagnant environments in which intergenerational relations are experienced, but also provide the establishment of social relations between ages and generations (Vanderbeck and Worth, 2015). In this case, intergenerational space can be defined as environments where individuals from different generations come together.

These spaces can occur naturally in daily life and can be specially designed for a purpose. In order to create intergenerational space, not only indoor areas such as conference rooms, meeting rooms, but also outdoor spaces such as training classes and dance halls, parks, open-air cinemas, outdoor theaters, picnic areas and camping areas can be used (Polat, Okçu and Çelik, 2019) However, creating dynamic intergenerational gaps is more than just having a physical place (Brown and Henkin, 2012). Intergenerational spaces should be selected and designed in such a way that individuals from different generations can easily interact. In organizations, natural or designed intergenerational learning spaces that can support intergenerational interaction can be created. All formal or informal spaces can be used to engage in activities such as art, sports, travel, culture, food, entertainment, education and all kinds of online activities to bring different generations together (Polat, Okçu and Çelik, 2019).

Studies on the intergenerational field in Turkey are quite limited (Polat, Okçu and Çelik, 2019). In international literature, while more studies (Vanderbeck and Worth, 2015; Pastalan and Carson, 1979; Garling and Golledge, 1989; Layne, 2009; Yeates 1979; Carp and Carp,1984) have been carried out on physical space related to intergenerational space, there have also been studies that include social environment as well as physical environment (McNichols, 2010: 33; Woolsey, 2016). However, no scale was created to identify intergenerational spaces, especially in educational settings and there is no a scale that include all intergenerational space areas such as physical, social, task…. This study aimed to create a validated scale for assessing the lack of the literature. So if a researcher wants to studies in intergenerational spaces (especially in educational organizations) can use this scale.

Method

This section consists of the participants of the research, the process of preparing the data collection tool, the collection of data, the analysis and interpretation of the data.

Participants

The participants of the study consisted of 90 primary school teachers working in primary schools in Derince district of Kocaeli province in the spring term of 2018- 2019 academic year. All 90 scales returned but 12 scales were excluded due to errors in coding. With the remaining 78 scales, data were collected.

In the scale development process, a certain sample size must be provided for factor analysis. Kline (1994) stated that the ratio of the sample with the substance can be reduced to 2: 1 with the ratio of 10: 1 in order to provide the sample size appropriately. According to Tabachnich and Fidell (2001) and Yaşlıoğlu (2017: 75), the conditions related to the sample of exploratory factor analysis are that the number of samples is higher than the number of items and the number of samples is at least 50.

When these conditions were taken into consideration, it was observed that appropriate conditions were provided in terms of sample size for factor analysis of the scale.

Measuring Tool

Intergenerational Space Scale (ISS)

ISS (Intergenerational Space Scale) was designed to determine the spaces in which teachers from different generations come together. Before the items of the scale were created, the related literature was examined and necessary scans were made. A pool of 45 items was developed with the evaluation of the results of the interviews, held by authors with classroom teachers in order to determine the spaces where teachers from different generations come together. The scale was designed as a five-point Likert type (1: never, 2: rarely, 3: as much as possible, 4: often, and 5: always). For the clarity of the scale, the opinions of two classroom teachers and one Turkish teacher were obtained and two items were revised. Afterwards, the opinions of three faculty members working in the Kocaeli University Educational Sciences Department were obtained for the content validity. In this way, a scale consisting of 45 items was developed. In order to review the intelligibility of the scale items and spelling and punctuation errors, the scale was presented to the opinion of two classroom teachers and a Turkish teacher and four items were rearranged. First of all, two expressions were rewritten more accurately. Spelling, punctuation and spelling errors are reviewed. Finally, a trial form consisting of 45 items was created.

The scale was applied to 90 classroom teachers and 78 responses were considered appropriate.

Data Analysis

The reliability analysis of the scale was analyzed with SPSS 24 program and its validity was analyzed with AMOS 20. The Cronbach's alpha value for the reliability of the scale and the factor analysis values for the validity of the scale were examined.

The reliability of ISS was tested by the internal consistency coefficient and Spearman correlation coefficient, and the construct validity of ISS was tested by EFA and CFA. EFA was performed using varimax vertical rotation using principal components analysis and x^2 / *sd*, RMSEA, GFI, NNFI, CFI and SRMR fit indices were used to evaluate the model tested with CFA.

Results

Validity Analysis:

For the validity study of the scale, factor analysis was applied. Factor analysis can be defined as a statistical technique that tries to explain the measurement with few factors by collecting the variables that measure the same structure or quality (Büyüköztürk, 2010). According to Köymen (1994), factor analysis is also a structure validity study. Prior to performing factor analysis, Kaiser-Meyer-Olkin (KMO) and Bartlett's sphericity test were used to determine whether the data were appropriate for factor analysis. The value obtained from the KMO test is 0.89. The fact that the value obtained from the KMO test results is close to 1 indicates that the adequacy of the data obtained from the sample is excellent and that it is below 0.50 indicates that it is unacceptable (Tavşangil, 2014). In addition, a normal distribution of the universe is required for factor analysis. To determine this, it is necessary to evaluate the Barlett sphericity test result. Barlett's sphericity test was calculated as $\chi^2 = 1707.05$ ($p < 0.01$). The significant Bartlett sphericity test indicates that the data constitute a normal multivariate distribution. These results can be interpreted as the data set is suitable for factor analysis (Büyüköztürk, 2010).

After a sequence of exploratory factor analysis, 20 items with factor load less than 0.40 and high load value for more than one factor were excluded from the scale. For the remaining 25 items, the factor analysis was performed again and it was found that it was collected under four factors with eigenvalues greater than 1. The variance explained by these four factors on the scale is 72.59%. In the determination of the items constituting the scale, attention was paid to the fact that item loads were greater than 0.40

and that each item was under one factor. Factor load value is a factor that explains the relationship of the item with the related item. In addition, this value above 0, 45 means that the item measures the relevant factor (Büyüköztürk, 2010). The results of the analysis are shown in Table 1.

Table 1. Exploratory Factor Analysis Results

Item	Socio-Cultural Activities	Intergenerational Sensitivity	Educational Meetings	Educational Activity
m34	*,819*			
m38	*,765*			
m15	*,756*			
m11	*,743*			
m28	*,741*			
m10	*,684*			
m26	*,654*			
m32	*,620*			
m29	*,604*			
m30	*,472*			
m41		*,827*		
m39		*,704*		
m35		*,669*		
m43		*,643*		
m33			*,834*	
m21			*,830*	
m45			*,694*	
m27			*,640*	
m40			*,483*	
m9				*,730*
m5				*,675*
m17				*,671*
m8				*,609*
m7				*,483*
m42				*,420*
The eigenvalues	*13,37*	*2,47*	*1,23*	*1,06*
Explained variance (%)	*%23,53*	*%19,36*	*%16,84*	*%12,85*
Total variance explained (%)	*%23,53*	*%42,89*	*%59,73*	*%72,58*

The first factor obtained from the EFA consists of 10 items containing expressions such as, "I listen to concerts with my teachers from different (upper / lower) generations.", "I watch movies with my teachers from different (lower / upper) generations." and it is called "socio-cultural activities". The second factor obtained as a result of the EFA consists of four items containing expressions such as, "I come together with teachers from different (lower / upper) generations in their visits.", "I come together with teachers from different (lower / upper) generations in places where birth congratulations take place." and it is called "Intergenerational Sensitivity". The third factor obtained as a result of the EFA consists of five items containing expressions such as, "I come together with my colleagues from different (upper / lower) generations at the group teachers' board meetings.", "At the beginning of the year / year-end teachers' board meetings, I come together with my colleagues from different (upper / lower) generations." and it is called "Educational meetings". The third factor obtained as a result of the EFA consists of six items containing expressions such as, "I work with my teachers from different (upper / lower) generations while preparing a celebration program about certain days and weeks at school.", "I work with my teachers from different (upper / lower) generations when creating a project." and it is called "Educational activity".

In the second stage of the study, CFA was used to test the suitability of the factors determined by EFA to the factor structures determined by the hypothesis. Measurement models aim to reveal how and to what extent a group of observable variables (as a measurement tool) explain latent variables called factors. By constructing the first level CFA model, the latent factors in the structure of the new environmental paradigms scale and the interdependent effects between these factors were tested in the AMOS 20 program. The first dimension of the Intergenerational Space Scale, which consists of four

dimensions, consists of Socio-cultural Activities, the second dimension is Intergenerational Sensitivity, the third dimension is Educational Meetings and the fourth dimension is Educational Activities. The unobservable variables, Socio-cultural Activities, Intergenerational Sensitivity, Educational Meetings and Educational Events, are shown in Figure 1 in the path diagram. These four factors are related to each other and are indicated by a two-way arrow. 25 observed variables representing the factors are represented by 25 rectangles. The factor loadings on the first factor, Socio-Cultural Activities, are m34, m38, m15, m11, m28, m10, m26, m32, m29 and m30. The factor loads on the second factor, Intergenerational Sensitivity, are m41, m39, m35 and m43. Factor loads on the third factor, Educational Meetings, are m33, m21, m45, m27 and m40. Factor loads on the fourth factor, Educational Activity, are m9, m5, m17, m8, m7 and m42. Each observed variable is loaded by a single factor.

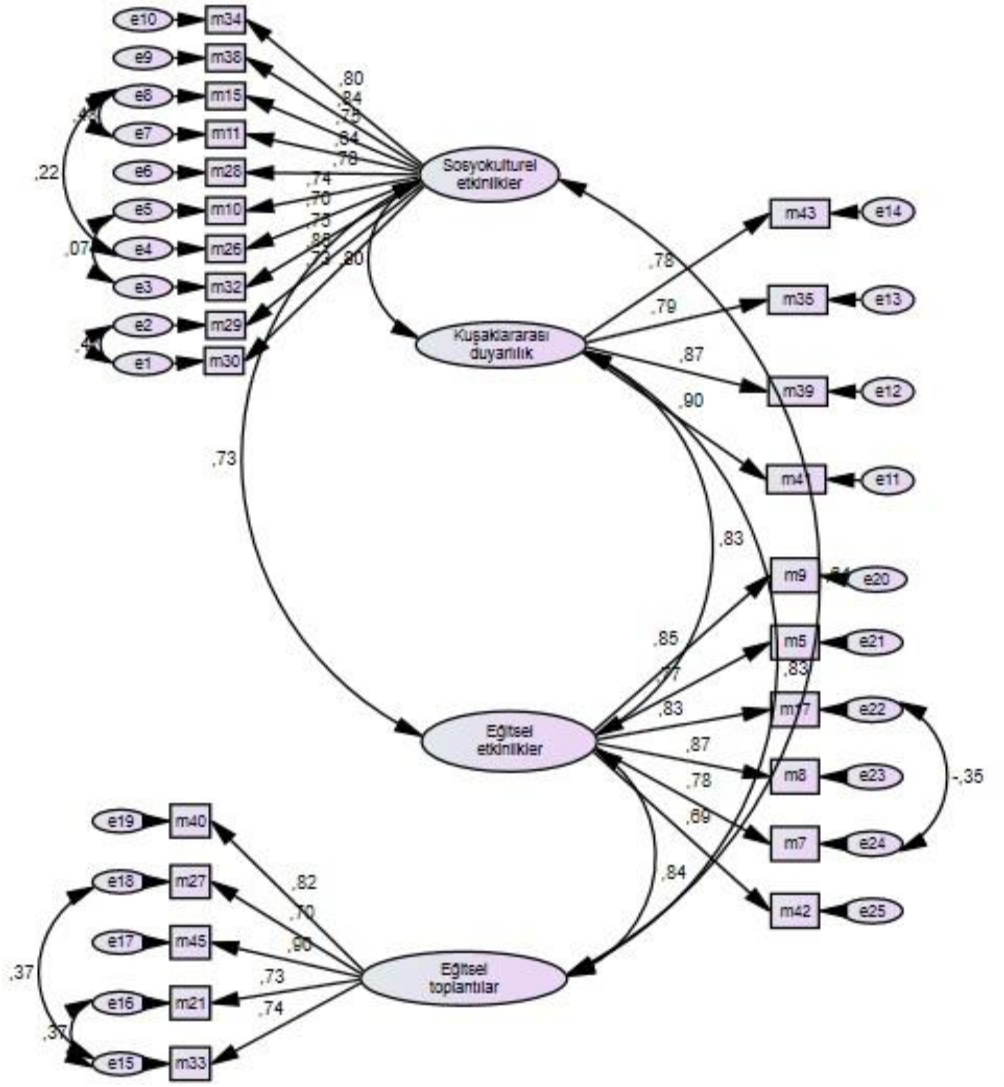

Figure 1. Confirmatory Factor Analysis Diagram

In the path diagram drawn with the help of the AMOS graph menu in Figure 1, all the standardized values obtained should not exceed 1. The value of 0.73 is the standardized correlation value between Socio-cultural Activities and Educational Activities, the value of 0.80 is the standardized correlation value between Socio-cultural Activities and Intergenerational Sensitivity, the value of 0.84 is the standardized correlation value between Socio-cultural Activities and Educational Meetings. , 0.83 represents the standardized correlation value between Educational Activities and Intergenerational Sensitivity, 0.84 indicates the standardized correlation value between Educational Activities and Educational Meetings, 0.83 indicates the standardized correlation value between Educational Meetings and Intergenerational Sensitivity. Standardized analysis values give an idea of how well each item (observed variable) is a representative of its latent variable.

When the path diagram is analyzed, the unidirectional arrows pointing to the variable observed from the latent variable Socio-cultural Activities, Intergenerational Sensitivity, Educational Meetings and Educational Activities show the unidirectional linear relationship, and the bidirectional arrows indicate the bidirectional linear relationship. These variables provide information on how well each item represents its own latent variable. In the diagram, when the standardized parameter values are examined, it is seen that m32 "I meet with my friends from different (upper / lower) generations in wedding venues." with a load of 0.88 is the most effecting dimension that affects Socio-Cultural Activities, and m10 "I go to exhibitions with my teachers from different (upper / lower) generations." with a load of 0.70 is the least affecting dimension. In other words, as a socio-cultural activity, teachers from different generations gathered mostly in wedding venues, and teachers from different generations went to exhibitions together the least.

It is seen that m41 question "I get together with my teacher friends from different (upper / lower) generations on their visits." has the most effect on the intergenerational sensitivity factor with a load of 0.90 and m43 "I meet with my teacher friends from different (upper / lower) generations in the places where new house congratulations take place." has the least effect on the load with 0.78. In other words, it has been shown that the most frequently gathered space of the visits of the teachers from different generations is the place where they visit patients and the space where they come together the least are the new house greetings.

It is seen that m45 question "I come together with my colleagues from different (upper / lower) generations at the beginning/end of the year in professional seminars." has the most effect on the educational meetings factor with a load of 0.90 and m27 "I will be together with my colleagues from different generations at the branch teachers' board meetings." has the least effect on the load with 0.70. In other words, it was found that the educational meetings where the teachers from different generations are together are mostly the beginning of the year/end of the year and the least the branch teachers' board meetings.

It is seen that m8 question "I meet with my teachers from different (upper / lower) generations in the schoolyard." has the most effect on the educational activities factor with a load of 0.87 and m7 "I'll be with my fellow teachers from different (upper / lower) generations during breaks." has the least effect on the load with 0.69. In other words, it was shown that teachers from different generations come together mostly in the schoolyard as the educational activity, and teachers from different generations come together at least during breaks.

When the CFA results were examined, no item was removed from the scale because the *t* values of the items did not show inconsistency in the factors to which they belong. Because the non-meaningful *t* value of the items was not seen in the analysis.

When the indicators and compliance indexes of the items were analyzed, it was seen that the chi-square value (505,965; p = .00) was significant as a result of CFA. Other compatibility indexes of scale items according to CFA results are examined in the table below.

Table 2. Confirmatory Factor Compliance Indexes

x^2	df	p	$x^{2/df}$	GFI	CFI	RMSEA
505,965	267	,000	1,895	0,70	0,87	0,10

Table 3. Confirmatory Factor Compliance Indexes and Acceptable Values

Compliance Index	**Acceptable Value**	**Obtained Value**
Chi-Square / Degree of Freedom	≤5.00	1,895
Goodness of Fit Index (GFI)	>0.90	,706
Adjusted Goodness of Fit Index (AGFI)	≥0.85	,635
Normed Fit Index (NFI)	≥0.90	,755
Not Normed Fit Index (NNFI)	≥0.90	,852
Comparative Fit Index (CFI)	≥0.90	,871
Standardized Root Mean Squared Residual (SRMR)	≤0.10	, 0764
Root Mean Square Error of Approximation (RMSEA)	≤0.08	,103

Source: Randall E. Schumacker and Richard G. Lomax, A Beginner's Guide To Structural Equation Modelling, Second Edition, Lawrance Erlbaum Associates, Inc., 2004, p.81-82.

In cases where x^2 value is significant, it is recommended to look at x^2 / df value (Şimşek, 2007). The ratio of x^2 / df (505,965 / 267 = 1,895) is less than 3 and indicates perfect fit (Sümer, 2000). The other indices of fit (RMSEA =, 103; GFI =, 706; NNFI (TLI) = 0.852, CFI =, 871; SRMR =, 0764) were also observed.

GFI (Maiti and Mukherjee, 1991), which is a proportional comparison of reality and modeled, has a statistic of between 0 and 1 and tends to increase as the ratio of sample size to the degree of freedom increases (Bollen, 1990, Hoelter, 1983). Traditionally, a threshold of 0.90 has been proposed (Shevlin and Miles, 1998).

The NFI value is between 0 and 1, and a threshold value of 0.90 indicates good suitability (Hu and Bentler, 1999). The missing part of the NFI statistic is that the models studied with less than 200 samples show low suitability (Mulaik et al., 1989). Therefore, the NFI value was less than 0,755 due to the sample size being below 200 in the ISS scale.

NNFI (non-normed fit index), or TLI in other words, statistics are used to eliminate the effect of sample size. There were different opinions on the threshold value of TLI. In addition to thresholds such as TLI> 0.80, high thresholds such as TLI> 0.95 are also found (Hu and Bentler, 1999; Byrne, 2011). However, the TLI statistic is also sensitive to sample size and can give low compliance values even if other statistics show good fit at low sample sizes. In the ISS scale, the TLI value was very close to the acceptable value of 0.852.

CFI is an improved version of the NFI statistic, which takes into account sample size and gives good results even in small samples, and is one of the most accepted and used statistics. Similarly, the NFI compares the zero model with the sample covariance matrix and obtains a value between 0 and 1. The closer to 1 the model, the greater the suitability of the model. Initially, a threshold value of 0.90 was accepted, and later 0.95 was determined as a good indicator of suitability (Bentler and Bonnet, 1980). In ISS, this value was found to be 0, 871, very close to the acceptable value.

RMSEA is a statistic which gives the researcher information about the compatibility of the covariance matrix of the main mass with unknown but optimally planned parameters (Byrne, 2011: 664). The acceptable values for the threshold values of the RMSEA have changed over time. In the early 90s, values between 0.05-0.10 expressed an average fit, while values above 0.10 were interpreted as poorly adapted models (MacCallum et al., 1996). Subsequently, medium and low values between 0.08 and 0.10 were called good. (McQuitty, 2004). ISS's RMSEA value was found to be 0,103. This value is slightly above the moderately acceptable value for model compatibility.

The accepted value of the SRMR value was .100.10, whereas it was 0.764 in the ISS and had an acceptable ratio.

When all indexes were evaluated together, the goodness of fit indices indicated a sufficient level of fit. All these findings show that the four-factor structure of ISS is confirmed.

Reliability Analysis:

The reliability of ISS was tested by Cronbach's Alpha internal consistency coefficient and Spearman-Brown correlation coefficient. The overall reliability of the 25-item scale was 0.96. The internal consistency coefficient for socio-cultural activities sub-dimension was 0,93; the internal consistency coefficient for the intergenerational sensitivity sub-dimension was 0,89; internal consistency coefficient for educational meetings sub-dimension was 0.89; the internal consistency coefficient for the educational activity sub-dimension was 0.90. These values indicate that ISS is a highly reliable scale.

Conclusion, Discussion and Suggestions

This study was conducted to develop a valid and reliable assessment tool for identifying spaces where teachers from different generations came together. For this purpose, the validity of ISS was examined with construct validity and its reliability was examined with an internal consistency coefficient. Within the scope of the validity study of the scale, EFA was performed first. According to the EFA result, a four-factor structure consisting of 25 items explaining 72.59% of the total variance has emerged. Considering the content and theoretical structure of the items in the factor, the first factor was named socio-cultural activities, the second factor was intergenerational sensitivity, the third factor was educational meetings and the fourth factor was educational activities. CFA was used to verify whether the structure revealed by EFA was verified.

Findings related to the reliability of the scale indicate that the internal consistency coefficient calculated for the whole scale is sufficient (the whole scale = .96). When the findings regarding the reliability of the sub-dimensions were examined, it was seen that the internal consistency coefficients were sufficient (Socio-cultural activities = .93; Intergenerational sensitivity = .89; Educational meetings = .89; Educational activity = .90).

When the results of the analysis regarding the validity and reliability of ISS are evaluated together, it is seen that the scale has sufficient psychometric properties. It is possible to say that the scale is a valid and reliable data collection tool that can be used to identify the spaces where teachers from different generations who work in the schools affiliated to the Ministry of Education in Turkey congregate. This scale is important for the literature because it contribute the studies of intergenerational spaces all sizes. It can be used for calculate many values and relationships in educational organizations with different generations of teachers at schools. Also it can be used in the other intergenerational organizations if it is adapted. In this respect, it can be said that ISS can be used in researches on bringing together teachers from different generations in schools.

These studies have some limitations. One of them is a small sample size and the other is participants from consist only primary school teachers. So perhaps with a big size or with the other branch teacher types the values and results can be different. For further studies it can be suggested with a big sample size. Also for further studies can be searched with different branch teachers or in another organization types.

References

Argote, L., McEvily, B. & Reagans, R. (2003). "Managing Knowledge in Organizations: an Integrative Framework and Review of Emerging Themes", *Management Science, 49* (4), 571-582.

Atak, N. Ü. (2016). *X-Y-Z Kuşakları ve Kuşaklararası Farklılıkların Yönetimi*. Ankara: Nobel.

Bentler, P. M., & Bonett, D. G. (1980). Significance Tests and Goodness of Fit in the Analysis of Covariance Structures. *Psychological Bulletin, 88*(3), 588.

Bollen, K. A. (1990). Overall Fit in Covariance Structure Models: Two Types of Sample Size Effects. *Psychological Bulletin, 107*(2), 256.

Bowles, M. L. (1993). The Gods and Goddesses: Personifying Social Life in the Age of Organization. *Organization Studies, 14*, 395–418.

Byrne, B. M. (2011). *Structural Equation Modeling with AMOS Basic Concepts, Applications, and Programming (Multivariate Applications Series),* New York: Routledge.

Brown, C. & Henkin, N. (2012). "*Intergenerational Community Building: Resource Guide," Communities for All Ages*. Philadelphia, PA: Intergenerational Center, Temple University.

Büyüköztürk, Ş. (2002). Faktör Analizi: Temel Kavramlar ve Ölçek Geliştirmede Kullanımı, *Kuram ve Uygulamada Eğitim Yönetimi, 32* (Güz), 470- 483.

Büyüköztürk, Ş. (2010). *Sosyal Bilimler için Veri Analizi El Kitabı.* (12. Baskı). Ankara: Pegem Akademi.

Carp, F. M. & Carp, A. (1984). A Complementary/Congruence Model of Well-Being or Mental Health for the Community Elderly. *In Elderly People and the Environment: 7.*

Doornbos, A. J., Bolhuis, S., & Simons, P. R. J. (2004). Modeling Work-Related Learning on the Basis of Intentionality and Developmental Relatedness: A Noneducational Perspective. *Human Research Development Review, 3*(3), 250-274.

Edge, K. (2014). A Review of the Empirical Generations at Work Research: Implications for School Leaders and Future Research. *School Leadership and Management, 34*(2), 136-155.

Eraut, M. (2004). Informal Learning in the Workplace. *Studies in Continuing Education, 26*(2), 247-273.

Facer, K. ve Sandford, R. (2010). "The Next 25 Years Future Scenarios and Future Directions for Education and Technology," *Journal of Computer Assisted Learning, 26*, 74–93.

Fuller, A., ve Unwin, L. (2004). Young People as Teachers and Learners in the Workplace: Challenging the Novice-Expert Dichotomy. *International Journal of Training and Development, 8*(1), 32-42.

Garling, T. ve Golledge R. G. (1989). *Environmental Perception and Cognition. Advances in Environment, Behavior, and Design*. New York: Plenum Press.

Geeraerts, K., Vanhoof, J. & Van den Bossche, P. (2016), "Teachers' Perceptions of Intergenerational Knowledge Flows", *Teaching and Teacher Education, 56* (Mayıs), 150-161.

Gerpott, F. H., Lehmann-Willenbrock, N., & Voelpel, S. C. (2016). A Phase Model of Intergenerational Learning in Organizations. *Academy of Management Learning & Education.*

Grangeat, M. ve Gray, P. (2007). "Factors Influencing Teachers' Professional Competence Development", *Journal of Vocational Education & Training, 59*(4), 485-501.

Hoelter, J. W. (1983). The Analysis of Covariance Structures: Goodness-of-fit Indices. *Sociological Methods & Research, 11*(3), 325-344.

Hu, L. T., ve Bentler, P. M. (1999). Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives. Structural Equation Modeling, *A Multidisciplinary Journal, 6*(1), 1-55.

Kaplan, M., Thang, L. L., Sanchez, M. ve Hoffman, J. (2016). "*Intergenerational Contact Zones A Compendium of Applications*," Penn State Extension.

Kline, P. (1994). *An Easy Guide To Factor Analysis*. London: Routledge.

Köymen, Ü. (1994). Öğrenme ve Ders Çalışma Stratejileri Envanteri: Geçerlik ve Güvenirlik Çalışması. *Psikolojik Danışma ve Rehberlik Dergisi, 2*(1), 19-28.

Kwakman, K. (2003), "Factors affecting teachers' participation in professional learning activities", *Teaching and Teacher Education, 9* (2), 149-170.

Lohman, M.C. (2006), "Factors influencing teachers' engagement in informal learning activities", *Journal of Workplace Learning, 18*(3),141-156.

MacCallum, R. C., ve Tucker, L. R. (1991). Representing sources of error in the common-factor model: Implications for theory and practice. *Psychological Bulletin, 109*(3), 502.

McQuitty, S. (2004). Statistical power and structural equation models in business research. *Journal of Business Research, 57*(2), 175-183.

Maiti, S. S., & Mukherjee, B. N. (1991). Two new goodness-of-fit indices for covariance matrices with linear structures. *British Journal of Mathematical and Statistical Psychology, 44*(1), 153-180.

Mannheim, K. (1952). *Essays on the sociology of knowledge.* London, UK: Routledge & Kegan Paul.

McNichols, D. (2010). Optimal knowledge transfer methods: a Generation X perspective. *Journal of Knowledge Management, 14* (1), 24-37.

Mulaik, S. A., James, L. R., Van Alstine, J., Bennett, N., Lind, S., & Stilwell, C. D. (1989). Evaluation of Goodness-of-fit Indices for Structural Equation Models. *Psychological Bulletin, 105*(3), 430.

Novotný, P., & Brücknerová, K. (2014). Intergenerational Learning Among Teachers: An Interaction Perspective. Studia Paedagogica, 19(4). doi:10.5817/SP2014-4-3

Parise, L.M. & Spillane, J.P. (2010). "Teacher Learning and Instructional Change: How Formal and on-the-Job Learning Opportunities Predict Change in Elementary School Teachers' Practice", *The Elementary School Journal. 110* (3), 323-346.

Pastalan, L. A. & Carson D. H. (1970). *Spatial Behavior: An Overview. Spatial Behavior of Older People.* Ann Arbor, MI: University of Michigan Press.

Polat, S., Okçu, Y. & Çelik, Ç. (2019). Creating and Utilizing Spaces to Enhance Intergenerational Learnings and Results, *International Journal of Evoluation and Research in Education, 8* (1), 1-8.

Randall E. Schumacker & Richard G.(2004). Lomax, A Beginner's Guide To Structural Equation Modelling, Second Edition, *Lawrance Erlbaum Associates,*81-82.

Ropes, D. (2011). *Intergenerational Learning in Organisations. A research Framework*. In Cedepob (Ed.), Working and Ageing. Guidance and Counselling For Mature Learners. Luxembourg: Publications Office of the European Union.

Shevlin, M., & Miles, J. N. (1998). Effects of Sample Size, Model Specification and Factor Loadings on the GFI in Confirmatory Factor Analysis. *Personality and Individual Differences, 25*(1).

Starks, A. (2013). The Forthcoming Generational Workforce Transition and Rethinking Organizational Knowledge Transfer. *Journal of Intergenerational Relationships, 11*.

Sümer, N. (2000). Yapısal Eşitlik Modelleri: Temel Kavramlar ve Örnek Uygulama. *Türk Psikoloji Yazıları, 3*(6), 49-73.

Tabachnick, B. G. & Fidell, L. S. (2007). *Using Multivariate Statistics*. Boston: Pearson.

Tavşancıl, E. (2014). *Tutumların Ölçülmesi ve SPSS ile Veri Analizi*. (5. Baskı). Ankara: Nobel.

Thambi, M. & O'Toole, P. (2012). Applying A Knowledge Management Taxonomy to Secondary Schools. *School Leadership and Management, 32*(1), 91-102.

Tynjälä, P. (2008). Perspectives into Learning at the Workplace. *Educational Research Review, 3*, 130-154.

Vanderbeck, R. M. & Worth, N. (2015). *Intergenerational Space*. New York: Routledge.

Wheaton, B., Muthen, B., Alwin, D. F., & Summers, G. F. (1977). Assessing Reliability and Stability in Panel Models. *Sociological Methodology, 8,* 84-136.

Williams, K. Y., & O'reilly, C. A. (1998). Demography and Diversity in Organizations: A Review of 40 Years of Research. *Research in Organizational Behavior, 20,* 77-140.

Wolff, C. E., van den Bogert, N., Jarodzka, H., & Boshuizen, H. P. A. (2015). Keeping an Eye on Learning: Differences Between Expert and Novice Teachers' Representations of Classroom Management Events. *Journal of Teacher Education, 66*(1), 68-85.

Woolsey, J. C. (2016). *The Explonoraty Relationship Between Knowledge Sharing, Emotional Intelligence and Generational Cohorts for United States Healthcare Service Employees, (Doktora tezi),* Capella Universitesi, Capella.

Yaşlıoğlu, M. M. (2017). Sosyal Bilimlerde Veri Analizi ve Geçerlilik: Keşfedici ve Doğrulayıcı Faktör Analizinin Kullanılması. *İstanbul Üniversitesi İşletme Fakültesi Dergisi, 46*, 74- 85.

Yeates, M. (1979). *The Need for Environmental Perspectives on Issues Facing Older People. Location and Environment of Elderly Population*. Edited by S. M. Golant. New York: John Wiley and Sons.