

TEACHER ADAPTATION OF CHILD DEVELOPMENT ASSESSMENT SCALE (CDAS) INTO TURKISH AND EVALUATION OF DEVELOPMENT OF 5 -YEARS-OLD CHILDREN

Abstract: This study was conducted to examine the adaptation of the Child Developmental Assessment Scale (CDAS) to Turkish and the developmental evaluations of 5-year-old children in terms of several variables. A survey model was used in the study. The study group of this research is composed of children aged 5-year-old who attend independent public kindergartens of the Ministry of National Education in the county center of Bilecik and private nursery and day care homes. As a data collection tool in the research, the General Information Form was developed by the researcher and the CDAS which had been developed (2014) by Andrée Pomerleau, Nathalie Vézina, Jacques Moreau, Gérard Malcuit and Renée Seguin which was adapted to Turkish were used. For the linguistic equivalence of the scale, translations were first made in Turkish. The necessary statistical analyses were applied after the translation procedures and implementation. For the reliability studies of the scale, internal consistency coefficient Kuder Richardson and item total correlation analysis were applied. For the validity studies, the feedbacks of the expert academicians were analyzed by Kappa analysis and the validity of the contents was examined and the item strength and discriminative power of each item in the measure were calculated. The Kuder Richardson score for the reliability of the CDAS was found to be 0.79 for the groups scales applied. The high KR-20 values in the applications showed that the internal consistency of the test was high. With reference to the expert opinion, the validity of content and linguistic equivalence studies were found to be sufficient. These results suggest that the Child Development Assessment Scale is valid and reliable for children aged 5 years.

Keywords: Cognitive development, language development, motor development, social development, emotional development, pre-school.

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INTRODUCTION

Development is a future-oriented process of change of the organism from the fertilization to the death having physical, cognitive, language, social-emotional conditions and stages (Senemoğlu, 2012, 2). An individual's development takes place through the growth, maturation and learning processes. The development for of children is not at the same speed. Different areas of development accelerate or slow down at different times. Development also shows continuity (Cirhinlioğlu, 2015, 6). The individual can reach his/her level of potential development when the effect of the environment is added to his/her genetic heritage. If a person actively chooses the things that will bring one's life to the best point from his/her environment, one can create a unique developmental trajectory (Santrock, 2009, 20). It is the environment that will shape the inherited developmental characteristics of the child. If the child is not provided with sufficient learning opportunities by his/her environment, the child will not be able to demonstrate the expected level of developmental characteristics. It is therefore the task of parents, teachers or adults who interact with the child to contribute to the child's development. Pre-school opportunities are very important for children to adapt to society, to become independent individuals, to express themselves in the best way and to be both physically and mentally healthy. Pre-school education offers various enhanced experiences to children during the years when the development of their intelligence is the fastest and supports the development of children and improves the functions of the brain. In addition, it affects children's personality, creativity, self-perception, effective communication skills, social and emotional harmony by influencing cognitive, language, psycho-motor, social and emotional development in every field of life. The process of contributing to all these developments allows the child to start living a positive life and to maintain the positive effect of pre-school education throughout his/her life (Turaşlı, 2010, 10). In order to achieve this, it is necessary to know the developmental characteristics of childhood and to prepare educational programs suitable for their developmental characteristics. In order to

overcome the disadvantages of children growing up in disadvantaged environments, the implementation of early guidance programs is of great importance. Children's developmental levels may not reach the expected point if early guidance programs are not implemented, as they may not be able to gain noteworthy experience on time. Pre-school period is of critical importance for building up all the developmental areas of children. Preschool teachers should take the necessary measures to enhance the children's way of living in disadvantaged environmental conditions in their educational-instructional environments by considering genetic and environmental factors that play a role in the development of a child. In order to take the necessary measures, pre-school teachers should know cognitive, language, social and motor development of children in different developmental periods. Through early education services, it is possible to prevent or refine the problems of children with developmental shortcomings or to solve social-emotional problems and to make plans for their active participation in the pre-school period (Mahoney, 2007, 4).

The process of evaluating child development is necessary for early determination of developmental problems. The research aiming to determine the accuracy of the evaluations of kindergarten teachers and compare these evaluations with the evaluations of children's mothers has revealed that kindergarten teachers were able to accurately predict the general development level of children. At the same time, parents and teachers' evaluations of children's behavioral and developmental characteristics were found to be similar (Koch, Kastner-Koller, Deimann, Kossmeier, Koitz and Steiner, 2011, 241). Regular evaluation and monitoring of children's development ensures effective plans for children's development. If we can determine the areas in which children need contribution, we can meet these needs with the plans we will make. During the pre-school education process, it is important for educators to evaluate children's development in order to get to know the strong and weak sides of children better and to provide them with an appropriate educational environment. It seems that there are few suitable

tools for experts who want to assess child development quickly and accurately. In order to meet the needs in this area, it was considered important to carry out the adaptation of the Child Development Assessment Scale (CDAS) to Turkish, which is a fast, easy to manage, inexpensive and accessible scale for preschool teachers. The main purpose of this study is to adapt the Child Development Assessment Scale (CDAS) to Turkish and to examine the developmental assessments of 5-year-olds in terms of different variables. Research questions are below;

1. Is the Child Development Assessment Scale (CDAS) a reliable and valid measurement tool?
2. In accordance with the Adapted Child Development Assessment Scale (CDAS), does the assessment of the development of 5-year-old children significantly differ in terms of the variables within the scope of the research?

METHODS

The current study employed the survey model. This model has been designed to reveal an existing situation, to summarize the evaluation of study populations, and to develop relevant theories by evaluating the underlying causes of these characteristics (Chambers & Clark, 2012).

SAMPLE GROUP OF THE STUDY

The population of the study is comprised of 5 year-old children (not having completed their 72nd month) attending Independent public kindergartens and crèches affiliated to the Ministry of National Education in the city of Bilecik in Turkey in 2017-2018 school year. The sampling of the study selected to conduct reliability and validity studies consists of 233 five-year old preschoolers determined through the convenience sampling method. In this method, individuals who are easy to reach, suitable for research and volunteering are selected (Gravetter & Forzano, 2012). In order to investigate the five year-old year children's development depending on different variables, data were collected from a total of 285 preschoolers.

DATA COLLECTION TOOLS

In the current study, the "Child Development Assessment Scale (CDAS)", developed by Andrée Pomerleau, Nathalie Vézina, Jacques Moreau, Gérard Malcuit and Renée Séguin in 2005 to evaluate the development of five-year olds, was adapted to Turkish by the researcher. The personal information of the children was gathered by means of a general personal information form.

GENERAL INFORMATION FORM

In the current study, a general personal information form was developed by the researcher to obtain information about the children such as date of birth, gender, number of siblings, the birth order, the employment status of the mother, mother's education level, father's education level and the length of attendance to a pre-school institution.

CHILD DEVELOPMENT ASSESSMENT SCALE

The development of this scale was initiated by Andrée Pomerleau, Nathalie Vézina, Jacques Moreau, Gérard Malcuit and Renée Séguin in Canadian Montreal University in French language in 1998 and completed in 2005, within a seven year-period. It was adapted to English language in 2014. This scale allows the assessment of children's development level. In the original reliability study of the Child Development Assessment Scale, the internal consistency (KR-20) was found to be ranging from medium (0.50) to very good (0.80) for the target age group. Moreover, for the validity study of the original form of the scale, the correlations between Bayley and Stanford-Binet scores were examined and were found to be ranging from moderate (0.40) to very good (0.40) (> 0.60) (CLIPP, 2007, 15). The adaptability study of the scale was carried out only for the age group of five-year olds.

DATA ANALYSIS

For the validity and reliability studies of the Child Development Assessment Scale (CDAS), the relationship between the scores obtained from Kuder Richardson (KR-20) coefficients and scale items and the total score of the scale were

calculated by item-total correlation. In order to determine the reliability level of the scale, KR-20 coefficient was calculated. Item difficulty index, substance discrimination and Fleiss Kappa analyses were performed. After the reliability and validity studies of the scale, the development of preschool children were analyzed in terms of different variables by T-Test, ANOVA and Scheffe statistical analyzes.

RESULTS

RELIABILITY OF THE CHILD DEVELOPMENT ASSESSMENT SCALE (CDAS)

For the reliability studies of the Child Development Assessment Scale (CDAS), Kuder Richardson (KR-20) coefficient and the correlation between the scores taken from the scale items and the total score were calculated by means of item-total correlation. In order to determine the reliability level of the scale, KR-20 coefficient was calculated. A value close to 1.00 shows that the scale has a high reliability and a value close to 0.00 shows that the scale has a low reliability (Özçelik, 2010, 122).

Table 1. Item Reliability Results of Child Development Scale (CDAS)

Results Related to the Scale		Language/Cognitive Development Sub-dimension Results	Motor Development Sub-dimension Results	Social-Emotional Sub-dimension Results
Number of Items	46	24	10	12
KR20	0.79	0.78	0.51	0.62
\bar{x}	34.9	16.03	7.7	11.09
SS	5.09	3.7	1.69	1.33

As can be seen in Table 1, for the language/cognitive development sub-dimension of the Child Development Assessment Scale (CDAS), Kuder Richardson (KR-20) value was found to be 0.78; for the motor development sub-dimension, KR-20 was found to be 0.51; for the social-emotional sub-dimension, KR-20 value was found to be 0.62. Kehoe (1995,1) stated that for tests consisted of up to 50 items, KR-20 reliability coefficient should be higher than 0.50 and for tests consisted of more than 50 items, this value should be higher than 0.80. As the scale consists of a total of 46 items, a reliability coefficient higher than 0.50 was considered to be

enough. For the general reliability of the scores of the Child Development Assessment Scale (CDAS), Kuder Richardson (KR-20) value was found to be 0.7. Thus, the scale was found to have a high reliability. In the original version of the Child Development Assessment Scale (CDAS), in the 8th item of the language/cognitive development sub-dimension, children had to recognize the coins. Considering that coins are rarely used, the item 8 in the original scale was excluded from the scale and 1 point was automatically assigned to all the children; thus, difficulty and discrimination of the item 8 were not calculated.

Table 2. Item Total Correlation Results of Child Development Rating Scale (CDAS)

Dimensions	Item Number	\bar{x}	SS	Corrected Item Total Correlation	Cronbach α
Language/Cognitive Development	LC1	.7175	.45123	.234	.778
	LC2	.8341	.37285	.304	.773
	LC3	.8610	.34674	.421	.766
	LC4	.7309	.44447	.449	.763

	LC5	.9776	.14838	.246	.777	
	LC6	.9417	.23483	.217	.777	
	LC7	.7175	.45123	.535	.757	
	LC9	.6816	.46690	.248	.776	
	LC10	.7444	.43718	.426	.764	
	LC11	.4619	.49967	.373	.768	
	LC12	.4843	.50979	.419	.765	
	LC13	.9462	.24526	.331	.772	
	LC14	.5067	.50108	.215	.780	
	LC15	.3004	.45948	.323	.772	
	LC16	.1525	.36028	.347	.770	
	LC17	.4843	.50088	.449	.763	
	LC18	.1435	.35137	.302	.773	
	LC19	.9596	.19724	.215	.777	
	LC20	.1570	.36457	.216	.777	
	LC21	.4529	.49890	.324	.772	
	LC22	.8386	.36876	.483	.762	
	LC23	.9821	.13302	.208	.778	
	LC24	.7175	.45123	.234	.778	
	Motor Development	M1	.8834	.32166	.201	.488
		M2	.9910	.09449	.129	.509
		M3	.7489	.43463	.317	.448
		M4	.8206	.38453	.185	.492
		M5	.8565	.35137	.263	.471
M6		.5112	.50100	.286	.458	
M7		.6323	.48327	.158	.507	
M8		.6861	.46512	.303	.452	
M9		.7623	.42661	.136	.509	
M10		.8789	.32695	.189	.491	
Social-Emotional Development	SE1	.9776	.14838	.446	.593	
	SE2	.9283	.25865	.398	.583	
	SE3	.9865	.11546	.158	.625	
	SE4	.9865	.11546	.069	.633	
	SE5	.9955	.06696	.106	.630	
	SE6	.9955	.06696	.005	.635	
	SE7	.8969	.30482	.161	.634	
	SE8	.8430	.36457	.421	.573	
	SE9	.8251	.38073	.549	.532	
	SE10	.9552	.20742	.264	.610	
	SE11	.9731	.16217	.231	.616	
	SE12	.7354	.44210	.403	.585	

LC: Language/Cognitive, M: Motor Development, SE: Social-Emotional

As can be seen in Table 2, while the correlation between the items in the language/cognitive sub-dimension of the Child Development Assessment Scale (CDAS) is sufficient, the correlation between some items in the motor and social-emotional development sub-dimensions was found to be low. The mean scores taken by the children for these items in the scale were found to be close to 1 and their standard deviation values tended to decrease. The reason for the low correlation between some items in the motor and social-emotional development sub-dimensions of the Child Development Assessment Scale is that

these items were correctly responded by high majority of the children; that is, the variance generated by the scores taken from these items by the children is low. Özdamar (1999, 522) states that for an item to be excluded from a scale, the change occurring in the alpha coefficient and mean when this item is deleted from the scale should be examined (Tavşancıl, 2014, 33). When the items with low correlation coefficients are excluded from the scale, they will not cause any change in alpha reliability coefficient. Considering the changes to be brought about by these items in the alpha reliability coefficient of

the scale, it was decided to keep the items with low correlation coefficients in the scale. Moreover, these items were thought to measure important behaviors in the factor they refer to and when they were analyzed in terms of their contents by the experts, it was concluded that they would be included in the scale. As a result of the item analysis, the item total correlation of the items in the scale is positive and at the acceptable level in general and the reliability coefficient was found to be high. These results show that the items in the Child Development Assessment Scale measure similar behaviors and that the internal consistency of the scale is high. Thus, it can be argued that the Child Development Scale is a reliable scale for five-year old Turkish children.

VALIDITY OF THE CHILD DEVELOPMENT ASSESSMENT SCALE (CDAS)

In the current study, five stages were followed in the adaptation of the Child Development Assessment Scale (CDAS).

First Stage: The translation of the user manual and items of the Child Development Assessment Scale (CDAS) into Turkish was done by the researcher by receiving the necessary assistance. Then this translation was examined by two experts in the field of English language separately and necessary corrections were made. This translation to Turkish was then back-translated to English by an expert in the field of English language. Then these translations were evaluated by assigning scores as “Suitable (3)”, “Changeable (2)” and “Unsuitable (1)” by three experts in English language. In order to test the agreement between the evaluations, Fleiss Kappa analysis was run. Kappa values were found to be 0.958 for the language/cognitive development sub-dimension, 0.979 for the motor development sub-dimension and 0.979 for the social--emotional development sub-dimension ($p < 0.001$). The scale’s total score Kappa value was found to be 0.945 ($p < 0.001$). Thus, it can be argued that language match was ensured.

Second Stage: The original Child Development Assessment Scale (CDAS) and its Turkish version were submitted to the review of five expert academicians for their content validity and suitability for the Turkish culture. These experts

are academicians having research in the field of pre-school education. The experts were asked to evaluate each item in terms of translation, comprehensibility and development as “Suitable (3)”, “Changeable (2)” and “Unsuitable (1)” and to make comments on the items in the scale. In order to test the agreement between their evaluations, Fleiss Kappa analysis was conducted. Kappa values were found to be 0.949 for the language/cognitive development sub-dimension, 0.936 for the motor development sub-dimension and 0.961 for the social--emotional development sub-dimension ($p < 0.001$). The total Kappa value of the scale was found to be 0.957 ($p < 0.001$). In light of the feedbacks received from the experts, the necessary corrections were made. On the basis of all these findings, it can be argued that the scale has content validity.

Third Stage: The items on which the experts reached an agreement were taken to the Turkish form of the scale. The scale items on which the experts suggested some changes were examined by the researcher and the advisor academician and then necessary changes were made. As a result, the scale was ready for piloting. Piloting was conducted on a small group.

Fourth Stage: The changes made on the Child Development Assessment Scale (CDAS) on the basis of expert opinions are given below.

Language/Cognitive Development Item 1: “The child can tell the names of the items in pictures 20 and 21 (duck, hockey stick, shovel, road, bridge, suitcase).”, in this item the term “hockey stick” is not much known in the Turkish culture; thus, it was replaced with the term “ball”.

Language/Cognitive Development Item 14: “The child can correctly tell his/her birthday and month.”, as this item it was replaced with “The child can tell his/her age”.

Language/Cognitive Development Item 15: “The child can correctly tell the home phone number.” As the use of home phones are not very common as a result of technological developments, this item was replaced with the item “The child can correctly tell one of the emergency numbers (the police, fire department, ambulance).”.

Motor Development Item 3: “The child can draw the same of the two letters (W, N) shown in picture 37”, as the letter “W” is not in the Turkish alphabet, it was replaced with the letter “M”, which is more suitable for the

Turkish culture. As a result of these changes, the final form of the Child Development Assessment Scale (CDAS) was given and it became ready to be implemented.

Fifth Stage: In order to conduct to the reliability and validity studies of the Child Development Assessment Scale (CDAS), after the required

permissions were taken by the researcher, the scale was administered to the 5 year-old children included in the sampling and attending state or private kindergartens affiliated to the Ministry of National Education. The analysis results of the data obtained according to item difficulty index are presented in Table 3.

Table 3. The Results of Analysis of Child Development Evaluation Scale According to the Substance Difficulty Index

Dimensions	Item Number	Difficulty
Language/Cognitive Development	LC1	0.5
	LC2	0.6
	LC3	0.6
	LC4	0.5
	LC5	0.7
	LC6	0.6
	LC7	0.5
	LC9	0.6
	LC10	0.4
	LC11	0.5
	LC12	0.3
	LC13	0.3
	LC14	0.6
	LC15	0.3
	LC16	0.2
	LC17	0.16
	LC18	0.3
	LC19	0.19
	LC20	0.7
	LC21	0.18
	LC22	0.3
	LC23	0.6
	LC24	0.7
	Motor Development	M1
M2		0.7
M3		0.5
M4		0.5
M5		0.6
M6		0.3
M7		0.4
M8		0.4
M9		0.5
M10		0.6
Social-Emotional Development	SE1	0.7
	SE2	0.6
	SE3	0.7
	SE4	0.7
	SE5	0.7
	SE6	0.7
	SE7	0.6
	SE8	0.6
	SE9	0.6

	SE10	0.7
	SE11	0.7
	SE12	0.5
	Grand Average	0.50

LC: Language/Cognitive, M: Motor Development, SE: Social-Emotional

Item difficulty values ranging between 0.15 and 0.85 are considered to be acceptable (Güven and Topbaş 2015, 160). When the item difficulty indexes of the Child Development Assessment Scale were examined, they were found to be ranging between 0.2 and 0.7. The general item difficulty level of the scale was found to be 0.50. Thus, it can be argued that the items in the Child Development Assessment Scale are moderately difficult items. When the items of the Adapted Child Development Assessment Scale are individually examined in regard to their item difficulty levels, it is seen that the scale has different difficulty levels. A scale developed to guide education is expected to have different levels of difficulty. Therefore, a scale should be

consisted of very difficult, difficult, moderately difficult, easy and very easy items (Tekin, 2010, 248). At the same time, if majority of the items in a test are moderately difficult, its discrimination can be argued to be high (Haladyna, 2004, 400).

Item discrimination index can have a value ranging from -1 to +1. With an item’s increasing power to discriminate, its item discrimination index is expected to converge to 1. The items with a negative item discrimination index should be excluded from the scale. The items with an item discrimination index between 0.00 and 0.20 should be included in the index after having been corrected or improved (Şeker and Alisinanoğlu, 2017, 646).

Table 4. The Results of Analysis of Child Development Evaluation Scale According to Item Discrimination Index

Dimensions	Item Number	Discrimination
Language/Cognitive Development	LC1	0.3
	LC2	0.4
	LC3	0.5
	LC4	0.6
	LC5	0.1
	LC6	0.2
	LC7	0.7
	LC9	0.3
	LC10	0.6
	LC11	0.5
	LC12	0.5
	LC13	0.4
	LC14	0.3
	LC15	0.3
	LC16	0.4
	LC17	0.4
	LC18	0.5
	LC19	0.4
	LC20	0.2
	LC21	0.3
	LC22	0.5
	LC23	0.5
	LC24	0.3
	Motor Development	M1
M2		0.2
M3		0.6
M4		0.4
M5		0.4
M6		0.6

	M7	0.5
	M8	0.6
	M9	0.4
	M10	0.4
Social-Emotional Development	SE1	0.4
	SE2	0.5
	SE3	0.1
	SE4	0.1
	SE5	0.2
	SE6	1.00
	SE7	0.4
	SE8	0.6
	SE9	0.7
	SE10	0.3
	SE11	0.4
	SE12	0.7
	Grand Average	0.41

LC: Language/Cognitive, M: Motor Development, SE: Social-Emotional

When the item discrimination indexes of the Child Development Assessment Scale in the current study were investigated, they were found to be varying from 0.20 to 1. Thus, it was concluded that the items in the Child Development Assessment Scale are moderately discriminatory in general. The scale’s general item discrimination value was found to be 0.41. No item with a negative discrimination index was detected. Three items with an item discrimination index lower than 0.20 were found. For the items

with a discrimination index lower than 0.20, the expert opinions were sought and it was decided that these items could be used to evaluate children’s development. In light of all these findings, the Child Development Assessment Scale can be argued to be reliable and valid.

INVESTIGATION OF THE ASSESSMENTS MADE FOR THE 5 YEAR-OLD CHILDREN’S DEVELOPMENT BY THE ADAPTED CHILD DEVELOPMENT ASSESSMENT SCALE IN RELATION TO DIFFERENT VARIABLES

Table 5. The Results of T Test Analysis According to the Gender Variable Results of 5-Year-Old Children Development

Scale	Gender	N	\bar{x}	SS	Sd	T	P
Language/Cognitive Development	Female	140	17.07	3.681	283	3.187	.002*
	Male	145	15.73	3.454			
Motor Development	Female	140	7.69	1.725	283	.353	.725
	Male	145	7.76	1.752			
Social-Emotional Development	Female	140	11.27	1.286	283	1.069	.286
	Male	145	11.11	1.261			

*p<.05

These findings have revealed that the children’s development level mean scores vary significantly by gender in the sub-dimension “language/cognitive development” [$T_{(283)}= 3.187$,

$p<.05$], yet, do not vary significantly in the sub-dimensions “motor development” [$T_{(283)}= .353$, $p>.05$] and “social-emotional development” [$T_{(283)}= 1.069$, $p>.05$].

Table 6. The Results of One-Way Variance Analysis (ANOVA) According to the Assessments of the 5 Years Old Children’s Development on the basis of the Number of Siblings Variable

Scale	Number of Siblings	n	\bar{x}	SS	Source of Variance	Sum of Squares	Sd	Average of the Squares	F	P
Language/ Cognitive Development	1	63	16.46	3.644	Inter-group	77.112	3	25.704	2.683	.070
	2	178	16.65	3.595	In- group	3654.874	281	13.007		
	3 and more	44	15.25	3.577	Total	3731.986	284			
Motor Development	1	63	7.42	1.846	Inter-group	17.080	3	5.693	2.011	.136
	2	178	7.88	1.703	In- group	839.117	281	2.986		
	3 and more	44	7.52	1.663	Total	856.196	284			
Social- Emotional Development	1	63	11.12	1.442	Inter-group	4.289	3	1.430	1.275	.281
	2	178	11.15	1.308	In- group	456.707	281	1.625		
	3 and more	44	11.47	0.762	Total	46.996	284			

p>.05

The findings revealed that the children’s level of development does not vary significantly depending on the number of siblings in the sub-dimensions of “language/cognitive development”

[F₍₃₋₂₈₁₎=2.683, p>.05], “motor development” [F₍₃₋₂₈₁₎=2.011, p>.05] and “social-emotional development” [F₍₃₋₂₈₁₎=1.275, p>.05].

Table 7. The Results of One-Way Variance Analysis (ANOVA) According to the Assessments of the 5 Years Old Children’s Development on the basis of the Birth Order Variable

Scale	Birth Order	n	\bar{x}	SS	Source of Variance	Sum of Squares	Sd	Average of the Squares	F	P
Language/ Cognitive Development	1 st child	140	16.59	3.762	Inter-group	62.438	3	20.813	1.667	.191
	2 nd child	124	16.39	3.489	In- group	3669.548	281	13.059		
	3 rd child and others	21	15.47	3.338	Total	3731.986	284			
Motor Development	1 st child	140	7.41	1.815	Inter-group	63.257	3	21.086	10.889	.000*
	2 nd child	124	8.23	1.530	In- group	792.939	281	2.822		
	3 rd child and others	21	6.85	1.558	Total	856.196	284			
Social- Emotional Development	1 st child	140	11.12	1.428	Inter-group	4.483	3	1.494	1.358	.259
	2 nd child	124	11.20	1.154	In- group	456.513	281	1.625		
	3 rd child and others	21	11.61	0.669	Total	460.996	284			

* p<.05

In light of these findings, it can be argued that the children’s level of development does not vary significantly depending on the birth order variable in the “language/cognitive development” sub-dimension [F₍₃₋₂₈₁₎=1.667, p>.05]. The children’s level of development was found to be varying

significantly depending on the birth order variable in the “motor development” sub-dimension [F₍₃₋₂₈₁₎=10.889, p<.05]. No significant difference was found in the “social-emotional” sub-dimension [F₍₃₋₂₈₁₎=1.358, p>.05].

Table 8. Scheffe Test Results for Differences in the Developmental levels of 5 Years Old Children According to Birth Order Variable

Scale	N	\bar{x}	SS	Birth Order	1 st child	2 nd child	3 rd child and others
Motor Development	140	7.41	1.815	1 st child		*	
	124	8.23	1.530	2 nd child	*		*
	21	6.85	1.558	3 rd child and others		*	

According to these results, the source of the significance difference found in the “motor development” sub-dimension is the difference between the first-born child and the second-born child and between the second-born child and the third-born child. When the mean score of the second-born children ($\bar{x}=8.23$) is examined, it is

seen that it is higher than that of the first-born children ($\bar{x}=7.41$). Moreover, when the mean score of the second-born children ($\bar{x}=8.23$) is examined, it is seen that it is higher than that of the third-born children ($\bar{x}=6.85$).

Table 9. The Results of One-Way Variance Analysis (ANOVA) According to the Assessments of the 5 Years Old Children’s Development on the basis of the Their Mother’s Education Level Variable

Scale	Mother’s Education Level	n	\bar{x}	SS	Source of Variance	Sum of Squares	Sd	Average of the Squares	F	P
Language/ Cognitive Development	Elementary school	52	13.88	3.233	Intergroup	767.640	3	255.880	24.206	.000*
	Secondary school	34	15.47	3.561	In- group	2964.346	281	10.540		
	High school	97	15.98	3.453						
	University and graduate	102	18.36	2.930	Total	3731.986	284			
Motor Development	Elementary school	52	7.50	1.578	Intergroup	7.302	5	1.460	.503	.680
	Secondary school	34	7.70	1.931	In- group	848.895	279	3.043		
	High school	97	7.72	1.718						
	University and graduate	102	7.86	1.774	Total	856.196	284			
Social- Emotional Development	Elementary school	52	10.90	1.417	Intergroup	13.707	5	2.741	1.484	.219
	Secondary school	34	11.05	1.099	In- group	447.289	279	1.603		
	High school	97	11.31	1.066						
	University and graduate	102	11.27	1.274	Total	460.996	284			

*p<.05

According to these findings, there is a significant difference in the “language/cognitive” sub-dimension [$F_{(5-279)}=24.206, p<.05$]. There is no significant difference in the “motor development”

sub-dimension [$F_{(5-279)}= .503, p>.05$]. Moreover, no significant difference was found in the third sub-dimension “social-emotional development” [$F_{(5-279)}=1.484, p>.05$].

Table 10. Scheffe Test Results for Differences in the Developmental levels of 5 Years Old Children According to Their Mother’s Education Level Variable

Scale	N	\bar{x}	SS	Mother’s Education Level	Elementary	Secondary school	High school	University
Language/Cognitive Development	52	13.88	3.233	Elementary school			*	*
	34	15.47	3.561	Secondary school			*	
	97	15.98	3.453	High school	*			*
	102	18.30	2.935	University and graduate	*	*	*	

The results of Scheffe test have revealed that the source of the significant difference found in the “language/cognitive” sub-dimension is the difference between the children whose mothers are elementary school graduates and the children whose mothers hold a high school and undergraduate and graduate degree and the difference between the children whose mothers hold a high school degree and the children whose

mothers hold an elementary school degree and a graduate degree. When the mean scores of the children whose mothers hold an undergraduate and a graduate degree ($\bar{x}=18.3$) are examined, it is seen that that they are higher than those of the children whose mothers hold an elementary school degree ($\bar{x}=13.8$), a middle school degree ($\bar{x}=15.4$) and a high school degree ($\bar{x}=15,9$).

Table 11. The Results of T Test Analysis According to 5 Year-old Children’s Development on the basis of the Mother’s Status of Employment Variable

Scale	Mother’s Status of Employment	N	\bar{x}	SS	Sd	T	P
Language/Cognitive Development	Not working	164	15.56	3.685	283	4.637	.000*
	Working	121	17.51	3.323			
Motor Development	Not working	164	7.60	1.663	283	1.431	.154
	Working	121	7.90	1.823			
Social-Emotional Development	Not working	164	11.10	1.243	283	1.340	.181
	Working	121	11.31	1.310			

* $p<.05$

These results show that there is a statistically significant difference in the “language/cognitive development” sub-dimension [$T_{(283)}=4.637, p<.05$]. No significant difference was found in the “motor development” sub-dimension [$T_{(283)}=1.431, p>.05$]. And no significant difference was also found in the “social-emotional” sub-dimension [$T_{(283)}=1.340, p>.05$]. Thus, it can be concluded that there is no

difference between the motor and social-emotional development of the children whose mothers are working and that of the children whose mothers are not working; yet, in terms of “language/cognitive development”, the children whose mothers are working are more advanced when compared to the children whose mothers are not working.

Table 12. The Results of One-Way Variance Analysis (ANOVA) According to the Assessments of the 5 Years Old Children’s Development on the basis of the Their Father’s Education Level Variable

Scale	Father’s Education Level	n	\bar{x}	SS	Source of Variance	Sum of Squares	Sd	Average of the Squares	F	P
Language/ Cognitive Development	Elementary school	26	13.07	3.285	Intergroup	623.480	3	204.202	18.395	.000*
	Secondary school	31	14.61	3.955	In- group	3108.506	281	11.101		
	High school	103	16.18	3.333						
	University and graduate	126	17.16	3.173	Total	3731.986	284			
Motor Development	Elementary school	26	7.23	1.557	Intergroup	14.149	3	4.716	1.574	.196
	Secondary school	31	8.16	1.634	In- group	842.047	281	2.997		
	High school	103	7.65	1.649						
	University and graduate	126	7.78	1.844	Total	856.196	284			
Social- Emotional Development	Elementary school	26	10.46	1.748	Intergroup	19.260	3	6.440	4.084	.007*
	Secondary school	31	11.58	0.719	In- group	441.737	281	1.572		
	High school	103	11.16	1.067						
	University and graduate	126	11.28	1.367	Total	460.996	284			

*p<.05

According to these results, there is a statistically significant difference found for the “language/cognitive development” sub-dimension [$F_{(3-281)}=18.395$, $p<.05$]. No significant difference was found in the “motor development”

sub-dimension [$F_{(3-281)}=1.574$, $p>.05$]. And a significant difference was also found in the “social-emotional” sub-dimension [$F_{(3-281)}=4.084$, $p<.05$].

Table 13. Scheffe Test Results for Differences in the Developmental levels of 5 Years Old Children According to Their Father’s Education Level Variable

Scale	N	\bar{x}	SS	Father’s Education Level	Primary school	Secondary school	High school	University
Language/ Cognitive Development	26	13.07	3.285	Elementary school			*	*
	31	14.61	3.955	Secondary school				*
	103	16.18	3.333	High school	*			*
	126	17.31	3.212	University and graduate	*	*	*	
Social-Emotional Development	26	10.46	1.748	Elementary school		*	*	*
	31	11.56	0.719	Secondary school	*			
	103	11.16	1.067	High school	*			
	126	11.28	1.367	University and graduate	*			

These results show that the source of the significant difference found in the

“language/cognitive sub-dimension is the difference between the children whose fathers

hold an elementary school degree and the children whose fathers hold a high school, an undergraduate and a graduate degree and the difference between the children whose fathers hold a middle school degree and the children whose fathers hold an undergraduate or a graduate degree. The mean score of the children whose fathers hold an undergraduate and a graduate degree ($\bar{x}=17.3$) is examined, it is seen that it is higher than those of the children whose fathers are elementary school graduates ($\bar{x}=13.0$), middle school graduates ($\bar{x}=14.6$) and high school graduates ($\bar{x}=16.1$). The results of Scheffe test have revealed that the source of the significant

found in the “social-emotional development” sub-dimension is the difference between the children whose fathers are middle school graduates and the children whose fathers are high school graduates and the difference between the children whose fathers are high school graduates and the children whose fathers are elementary school graduates. When the mean score of the children whose fathers are elementary school graduates ($\bar{x}=10.4$) is examined, it is seen that it is lower than the mean scores of the children whose fathers are middle school graduates ($\bar{x}=11.5$), high school graduates ($\bar{x}=11.1$), hold an undergraduate degree or a graduate degree ($\bar{x}=11.2$).

Table 14. The Results of One-Way Variance Analysis (ANOVA) According to the Assessments of the 5 Years Old Children’s Development on the basis of the Length of Attendance to a Pre-school Institution

Scale	The Length of Attendance to a Pre-school	N	\bar{x}	SS	Source of Variance	Sum of Squares	Sd	Average of the Squares	F	P
Language/ Cognitive Development	1 year	98	14.91	3.746	Intergroup	421.669	2	210.834	17.961	.000*
	2 years	142	16.76	3.480	In- group	3310.317	282	11.739		
	3 years	45	18.44	2.340	Total	3731.986	284			
Motor Development	1 year	98	7.75	1.662	Intergroup	33.437	2	16.719	5.730	.004*
	2 years	142	7,47	1,757	In- group	822,759	282	2,918		
	3 years	45	8,46	1,645	Total	856,196	284			
Social- Emotional Development	1 year	98	10,87	1,318	Intergroup	15,197	2	7,599	4,807	,009*
	2 years	142	11,36	1,205	In- group	445,799	282	1,581		
	3 years	45	11,35	1,281	Total	460,996	284			

*p<.05

These results show that there is a statistically significant difference in the “language/cognitive development” sub-dimension [$F_{(2-282)}=17.691$, $p<.05$]. Similarly, a statistically significant difference was also found in the “motor

development” sub-dimension [$F_{(2-282)}=5.730$, $p<.05$]. Moreover, a statistically significant difference was also found in the “social-emotional development” sub-dimension [$F_{(2-282)}=4.807$, $p<.05$].

Table 15. Scheffe Test Results for Differences in the Developmental levels of 5 Years Old Children According to Length of Attendance to a Pre-school Institution

Child Development Assessment Scale	N	\bar{x}	SS	The Length of Attendance to a Pre-school	1 year	2 years	3 years
Language/Cognitive Development	98	14.91	3.746	1 year		*	*
	142	16.76	3.480	2 years	*		*
	45	18.44	2.340	3 years	*	*	

Motor Development	98	7.75	1.662	1 year			
	142	7.47	1.757	2 years			*
	45	8.46	1.645	3 years		*	
Social-Emotional Development	98	10.87	1.318	1 year		*	
	142	11.36	1.205	2 years	*		
	45	11.35	1.281	3 years			

The source of the significant difference found in the “language/cognitive development” sub-dimension, when the mean score of the children who have been attending the pre-school institution for three years ($\bar{x}=18.44$) is examined, it is seen that it is higher than that of the children who have been attending the pre-school institution for a year ($\bar{x}=14.91$). Similarly, the mean score of the children who have been attending the pre-school institution for three years ($\bar{x}=18.44$) is higher than that of the children who have been attending the pre-school institution for two years ($\bar{x}=16.76$). The source of the significant difference found in the “motor development” sub-

dimension, the mean score of the children who have been attending the pre-school institution for three years ($\bar{x}=8.46$) is higher than that of the children who have been attending the pre-school institution for two years ($\bar{x}=7.47$). The source of the significant difference found in the “social-emotional development” sub-dimension, the mean score of the children who have been attending the pre-school institution for two years ($\bar{x}=11.36$) is higher than that of the children who have been attending the pre-school institution for one year ($\bar{x}=10.87$).

DISCUSSION AND CONCLUSIONS

In the study, validity and reliability studies were made by adapting the “Child Development Assessment Scale” (CDAS) to Turkish and the developmental evaluations of 5-year-old children were examined in terms of different variables. The Kuder Richardson (KR-20) value calculated to test the reliability of the Child Development Assessment Scale (CDAS) was found to be 0.79. This high KR-20 value shows that the internal consistency of the scale is high. The expert reviews have revealed that the content and linguistic validity studies are adequate. The general item difficulty value of the scale is 0.50 and the general item discrimination value is 0.41. On the basis of these results, the Child Development Assessment Scale can be considered to be reliable and valid for five-year olds. It has been found that the five-year old children’s language/cognitive development varies significantly depending on the gender variable. On the basis of the mean scores, it can be argued that the girls are more advanced in terms of language/cognitive development than the boys. It is observed that girls establish more intense communication with their environment. While the communication skills of girls are boosted by the

environment and society, boys’ physical development is boosted more than their communication skills. These different attitudes remove towards male and female children may affect their development in different skill areas. There is some research in this field. While Kurtulan (2015, 3) and Aslan (2009, 2) stated that children’s development varies by gender, Kunday(2007, 2), Ramazan and Demir (2011, 83), Ünal-Gürocak (2007, 2) and Tokol (1996, 3) stated that children’s development does not vary by gender. Given the delineations above, it seems clear that there is some research in the literature not supporting the current research. In the current study, the 5 year-old children’s motor development was found to be not varying significantly depending on gender. This might be because during pre-school education, both girls and boys are provided with the same activities; thus, they engage in similar activities during their games and plays performed in similar environments. Şeker (2015, 3), Sarı (2001, 2), Ünal-Gürocak (2007, 2), Eynur (2013, 3), Tokol (1996, 3) stated that preschoolers’ motor development does not vary significantly depending on gender. All these studies support the current research. As a result of the comparison of the 5 year-old children’s social-emotional

development on the basis of gender, it was found that there is no significant difference between the boys' social-emotional development mean score and the girls' social-emotional development mean score. This might be because of the similar attitudes demonstrated by parents towards both genders. Due to these attitudes of parents, children of both genders exhibit similar characteristics. Tokol (1996, 3), Bilek (2011, 2), Karoğlu and Ünüvar (2017, 231) and Orçan (2004, 3) did not also find a significant difference between the social development levels of male and female children. These studies reported in the literature seem to support the current research. Yet, there are some studies not supporting the findings of the current research. Kurtulan (2015, 2), Karayılmaz (2008, 2), Seven (2007, 477), DiPrete and Jennings, (2009, 12), Tatlı and Pirpir-Alakoç (2015, 429), Ekici (2015, 70) and Yılmaz (2003, 2) found a significant difference between the social development levels of the preschoolers depending on their gender.

This study shows that children's development is not affected by the number of siblings and that each child's development process is independent of their brothers and sisters. Situations such as rapid phase of social and technological developments, increasing awareness of families and increasing interest in supporting children's development replace children's learning from siblings. Families are believed to have started to offer opportunities for every child, taking into account the changing circumstances of children. It is no longer desirable to expect the child to learn and develop by being influenced by his/her siblings. Thus, the number of siblings may affect other skills but not the developmental characteristics of children. This shows the importance of the fact that developmental evaluation should be personal. Each child is different and exhibits individual differences in development. Ünal-Gürocak (2007, 2), Ramazan and Demir (2011, 83), Orçan (2004), Karayılmaz (2008, 2), Ekici (2015, 70) also reported findings concurring with the current study. It is important in the development of a child is not his/her birth order but how much time and interest is allocated to the child and the existence of adults and peers that can positively affect the child's development

in their environment. The findings reported by Ramazan and Demir (2011, 83), Orçan (2004, 2), Seven (2007, 477) and Bilek (2011, 2) also support the finding of the current research. On the other hand, a significant difference was found in the "motor development" sub-dimension on the basis of the birth order variable. The findings have revealed that the second-born children are more advanced in terms of motor development. Parents may adopt more protective approaches towards their first children. Parents with protective attitudes can keep their children under control more than necessary and meet their every need and can impose many restrictions and limitations on their actions and relationships and can do many things that should be done by children on behalf of their children. Such attitudes are believed to influence the motor development of children. Sarı (2001, 2); as a result of the study conducted on six year-old children, found that the children's motor development does not vary depending on the birth order variable. Yılmaz (2003, 2) reported that there is a negative correlation between children's large muscle motor development and their birth order and that with increasing birth order, large muscle motor development of children becomes worse. With increasing level of mother's education, the quality of the time spent with the child is believed to increase as well. Moreover, mothers with higher levels of education can more carefully monitor the development stages of their children and can take the necessary precautions when needed. Mothers with higher levels of education may have more information about the developmental characteristics of their children and may create more stimulating home environments for their children. Thus, it can be seen as quite normal that the children whose mothers hold an undergraduate or a graduate degree are more advanced in the "language/cognitive development" sub-dimension than the children whose mothers are elementary, middle and high school graduates. Şahin-Çat (2009, 2), Kurtulan (2015, 2), Yılmaz (2003, 2), Aslan (2009, 3), Ünal-Gürocak (2007, 2), Yaşar and Aral (2011, 201) also reported findings in their studies investigating the language and cognitive development supporting the finding of the current study. In light of all these research findings, it can be argued that with

increasing level of education, mothers use more responsive language towards their children, provide more opportunities for their children to make observations, to think, to compare and to make predictions; in this way, help their children to be more willing for learning; as a result, their children become more advanced in their development. In the current study, it was found that the children's development does not vary significantly depending on the mother's education level variable in the "motor development" and "social-emotional development" sub-dimensions. Tokol (1996, 2) and Ünal-Gürocak (2007, 2); in their study focusing on motor development, reported findings supporting the finding of the current study. Kurtulan (2015, 3), Bilek (2011, 3), Tokol (1996, 2) and Seven (2007, 477); in their studies investigating social development, found results concurring with the current research while Orçan (2004, 2) and Ekici (2015, 2) reported findings not supporting the current research.

The mean score of the children whose mothers are working is higher than that of the children whose mothers are not working. What is more important than the quantity of the time spent with the child is the quality of this time. Spending quality and effective time with the child does not only mean being with the child in the same environment but supporting the child's development in different areas by getting them engage in purposeful activities. Working mothers may spend more limited but more qualified time with their children than mothers who do not work. Ramazan and Demir (2011, 83) compared the cognitive development level scores of the children in terms of different variables and found no significant correlation between mother's status of employment and their children's cognitive development level scores. In the current study, it was also found that the children's development level scores do not vary significantly depending on the variable of the mother's status of employment in the "motor development" and "social-emotional development" sub-dimensions. Sarı (2001, 2) investigated the children's psycho-motor development and reported that there is no significant difference between the psycho-motor development of the children whose mothers are working and that of the children whose mothers

are not working. Seven (2007, 477); on the other hand, reported that the children of the working mothers display fewer behavioral problems than the children of the non-working mothers and that this might be because of the fact that the children of the working mothers attend pre-school institutions. Changing living conditions lead to a changing father model. Now, it seems that fathers spend more time in interaction with their children than their fathers did with them. With increasing level of father's education, the quality of time spent with the child is expected to increase. The fathers with higher education levels are expected to be more conscious about the development of their children. The fathers with the awareness of their children's developmental characteristics are expected to support their children more in Dubow, Boxer and Huesmann (2009, 224) various development areas. Kurtulan (2015, 2), Aslan (2009, 2), Yaşar and Aral (2011, 201), Şahin-Çat (2009, 2), Ünal-Gürocak (2007, 2) and Dündar (2010, 3); in their studies focusing on cognitive and language development, reported findings concurring with the current study. Aslan (2009, 2), Tokol (1996, 3), Ekici (2015, 2), Bilek (2011, 3) and Yükçü-Bozkurt (2017, 3); in their studies investigating social-emotional development, reported findings not supporting the findings of the current study. The results of one-way variance analysis conducted to determine the correlation between the children's development level scores and father's education level have revealed that there is no significant difference in the "motor development" sub-dimension. In Tokol's study (1996, 3), the children's fine and rough motor development was evaluated in relation to different variables and no significant correlation was found between father's education level and fine and rough motor development.

Pre-school education provides many opportunities for children. It contributes to the development of children's many skills such as thinking, expressing their thoughts, acting more freely, establishing communication, belonging to a group and socialization. Attendance to a pre-school institution is of great importance for the development of a child because in such an educational environment, children learn in a more scientific, systematic and planned manner.

Moreover, the child can become more active in an educational setting. Such an educational setting allows children to acquire skills such as collaboration, sharing and interaction by enabling them to interact with their peers in an effective manner. In short, a pre-school institution helps children to be developmentally more advanced by supporting all the areas of development for the child. In their studies, Aytun-Kasuto (2005, 2), Şahin-Çat (2009, 2), Kurtulan (2015, 2), Dündar (2010, 2), Ünal-Güroçak (2007, 2), Tatlı, Alakoç-Pirpir (2015, 429), Delprato, Dunn and Zeitlyn, (2016, 28), Brooks-Gunn, (2017, 7) found that the children's development varies depending on their length of attendance to a pre-school education institution and that with increasing length of attendance to a pre-school institution, the children's development also increases more. As a result, it seems that as pre-school institutions are rich in activities and stimuli, children's development level increases with increasing time of attendance to a pre-school institution.

ADDITIONAL INFORMATION

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REFERENCES

- Aslan, M. *The Relationship Between Cognitive Processes and Compliance and Behavior Problems in 5-6 Age Group Children According to Some Variables*. Master Thesis, Istanbul University Institute of Social Sciences, İstanbul, 2009.
- Aytun-Kasuto, S. *The Effect of Family Interaction on the Social and Cognitive Development of Children*. Unpublished Master Thesis, Marmara University Institute of Educational Sciences, İstanbul, 2005.
- Bilek, M. *Comparison of Social Skills of Preschool Children in the Home and School Environment*. Master Thesis, Trakya University Institute of Social Sciences, Edirne, 2011.
- Brooks-Gunn, J., Han, W.J. & Waldfogel, J. *First-Year Maternal Employment and Child Development in the First Seven Years*. Monographs of The Society for Research in Child Development. 75 (2) (2010) : 7-9.
- Chambers, R. L., & Clark, R. G. (2012). *An Introduction to Model-Based Survey Sampling with Applications*. OUP Oxford.
- Cirhinlioğlu, F. *Child Development and Mental Health*. Ankara: Nobel Academic Publishing, (2015) 121-150.
- CLIPP (Centre de Liaison Sur l'intervention Et La Prevention Psychosociales). *Child Development Assessment Scale 0 to 5 Years Old (Cdass)*. Standardization Study Summary Report, 2007
- Delprato, M., Dunne, M. & Zeitlyn, B. *Preschool attendance: a multilevel analysis of individual and community factors in 21 low and middle income countries*. International journal Quantitative Research in Education. 3 (1) (2016): 2. 28.
- DiPrete, T.A. & Jennings, J.L. *Social/Behavioral Skills and the gender gap in Early educational achievement*. Social Science Research. 41 (1-15) (2009) : 12.
- Dubow, E.F., Boxer, P. & Huesmann, L.R. *Long term effects of parents' education on children's educational and occupational success: mediation by family interactions, child aggression and teenage aspirations*. Merrill Palmer Quarterly (Wayne State Univ. Press). 55 (3) (2009): 224-249
- Dündar, B. *The Relationship Between Self Perceptions of the 6 Years Old Children and Their Cognitive Performance*. Master Thesis, Istanbul University, Institute of Social Sciences, İstanbul, 2010.
- Ekici, F.Y. *Investigation of the Relationship Between Social Skills and Family Characteristics of Children in Preschool Education*. The Journal of Academic Social Science, 2 (4) (2015): 70-108
- Eynur, A. *The Investigation of the Gross Motor Skill Development of Students Studying in Preschool Institutions in the Central District of Kütahya Province, Kütahya.*, 2013.
- Gravetter, J. F. & Forzano, L. B. (2012). *Research methods for the behavioral sciences* (4. Baskı). USA: Linda Schreiber-Ganster.
- Güven, S. & Topbaş, S. *Adaptation, Validity and Reliability Preliminary Study of the Third Version of Early Language Development Test (Early Language Test Development-Third Edition) to English International Journal of Early Childhood Special Education (INT-JECSE)*, 6(2) (2015):151-172.
- Haladyna, T. M. *Developing and Validating Multiple-Choice Test Items* (3rd ed.). Mahwah, New Jersey: Lawrence Erlbaum Associates, Inc., 2004.
- Karayılmaz, D. *Investigation of the Relationship Between Emotional Intelligence and Social Adaptation Skills of Children in Kindergarten*. Master Thesis, Gazi University Institute of Educational Sciences, Ankara, 2008.
- Karoğlu, H. & Ünüvar, P. *Development Properties and Social Skills Levels of Preschool Children*. Mehmet Akif Ersoy University Faculty of Education Journal, 43(2017): 231-254.
- Kehoe, J., *Basic Item Analysis for Multiple-Choice Tests*. Practical Assessment, Research & Evaluation, 4(10) (1995).
- Koch, H., Kastner-Koller, U., Deimann, P., Kossmeier, C., Koitz, C. & Steiner, M. *The Development of Kindergarten Children as Evaluated by Their Kindergarten Teachers and Mothers*. Psychological Test and Assessment Modeling, 53 (2011): 241-257.

- Kuday, F. S. *Comparison of the Cognitive Development of Children with Family-Supported Institution-Based Education and Children 3-6 Years Old Who Have Never Received Pre-school Education*. Master Thesis, Marmara University Institute of Educational Sciences, İstanbul, 2007.
- Kurtulan, B. *Investigation of the Relationship Between Cognitive Skills and Social Skills in Early Childhood (4-7 Years)*. Master Thesis, Marmara University Institute of Educational Sciences, İstanbul, 2015.
- Mahoney, G. Social Work and Early Intervention. *Children & Schools*, 29 (1) (2007).
- Orçan, M. *Investigation of Social Development of 6 Years Old Children in Kindergarten by Perceived Parental Attitudes and Some Variables*. Master Thesis, Selçuk University Institute of Social Sciences, Konya. 2004.
- Özçelik, D. A. *Test Preparation Guide*. Ankara: Pegem Akademi Publishing, 2010.
- Özdamar, K. *Statistical Data Analysis with Package Programs (Second Edition)*. Kaan Bookstore, Ankara, 1999.
- Ramazan, O. & Demir, S. Cognitive Developmental Levels of 36-48 Months Old Children in Preschool Education Institution. *Journal of Educational Sciences*, 1 (2) (2011): 83-95.
- Santrock, W. J. *Life-Span Development* 14th Ed. Boston: McGraw-Hill, 2009.
- Sarı, K. *The Effect of Variables Associated with the Personal Qualities of Different Educational Institutions and Subjects on the Development of Basic Psychomotor Skills*. Master Thesis, Selçuk University Institute of Social Sciences, Konya, 2001.
- Senemoğlu, N. *Development, Learning and Teaching from Theory to Practice*. Ankara: Pegem Akademi Publishing, 2012.
- Seven, S. The Effect of Family Factors on Social Behavior Problems of Six Year Old Children. *Journal of Educational Administration in Theory and Practice*, 51 (2007): 477-499.
- Şahin-Çat, A. *Investigation of the Relationship Between Language Development of 5-6 Age Group Children Going Pre-school Education and Reading Relation and Habits of Mothers*. Master Thesis, Abant İzzet Baysal University, Institute of Social Sciences, Bolu, 2009.
- Şeker, K. *Comparison of 5-Year-Old Children going Preschool education in Rural Areas and Motor Skills of 5-Year-Old Children with Montessori Education*. Master Thesis, Selçuk University Institute of Social Sciences, Konya, 2015.
- Şeker P. T., & Alisinanoğlu, F. Early Mathematics Ability Test (Theme-3) Validity Reliability Study. *Social Science Studies*, 5 (4) (2017): 644-654.
- Tatlı & Pirpir, D. Investigation of the Effects of Pre-School Children's Relationships with Their Teachers on Their Social Skills Levels. *International Journal of Social Science*, 31 (2015): 429-441.
- Tavşancıl, E. *Gauging of Attitudes and Data Analysis with Spss (5th edition)*. Ankara: Nobel Publication Distribution, 2010.
- Tekin, H. *Gauging and Assessment in Education (20th edition)*. Ankara: Yargı Publications, 2010.
- Tokol, O. *Comparison of Developmental Properties and Parental Attitudes of 3-6 Years Old Children who are going and not going to Pre-School*. Master Thesis, Marmara University Institute of Social Sciences, İstanbul, 1996.
- Turaşlı, N. *Definition and Importance of Preschool Education*. (Editor: Gelengül Haktanır). Introduction to Preschool Education. Ankara: Anı Publishing, 2010.
- Ünal-Gürocak, S. *Evaluation of Language Development and Fine Motor Development of Children in Kindergarten*. Master Thesis, Abant İzzet Baysal University Institute of Social Sciences, Bolu, 2007.
- Yaşar, M. & Aral, N. The Effect of Preschool Education on Creative Thinking Skills. *Journal of Theoretical Education Science*, 3 (2) (2011), 201-209.
- Yılmaz, Y. *Development of School Maturity Checklist for Six Year Old Children in Preschool Education Institutions*. Unpublished Master's Thesis, Hacettepe University, Institute of Health Sciences, Ankara, 2003.
- Yükçü, Ş.B. *The Investigation of the Relationship between the Emotional Regulatory and Social Problem Solving Skills of Parents and the Emotional Literacy of Parents in Independent Kindergartens (Unpublished Master Thesis)*. Hacettepe University, Institute of Health Sciences, Ankara, 2017.