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The Effects of Environmental Writing Intervention on Early Literacy Skills of Pre-School Children at Risk

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The purpose of this study is to improve the early literacy skills of children from the low socio-economic level by having them interact with environmental print. Based on the objectives, the study adopted a quasi-experimental research model. The study group comprised children, who attend kindergartens that are affiliated to the Turkey- Ministry of National Education in Diyarbakır city center in the educational year of 2018-2019 and are also from the low socio-economic status. Either groups (experimental and control) were formed by 11 girls and 9 boys, 40 children in total. Test of Early Language Development (TELD) recipient language test, print awareness control list and letter, and name writing test was administered as pre-test and post-test to experimental and control groups to evaluate early literacy skills of children The duration of the study was 8 weeks and each practice were conducted for approximately 30 minutes, 5 days of the week. The study concluded that environmental print practices strongly supported the receptive language and early literacy performances of children from the low socio-economic level.

Keywords: early literacy, print awareness, environmental reading, preschool period, children

INTRODUCTION

"Early literacy skills", which are also known as pre-literacy skills, include phonological awareness, letter knowledge, oral language, print awareness and comprehension skills (Whitehurst &Lonigan, 1998). Many studies concluded that early literacy skills influence future literacy skills (Lonigan, Burgess & Anthony, 2000; Molfese, Beswick, Molnar & Jacobi-Vessels, 2006; Neumann, Hood, Ford & Neumann, 2012; Storch & Whitehurst, 2002). For this reason, foreign studies started to focus more on how to teach pre-school children early literacy skills since they help improve future literacy skills (Snow, Burns & Griffin, 1998).

Although literacy skills continue to develop throughout life, early childhood years (0 to 8 years) that include the beginning of literacy education, are considered the most important period in literacy development (Baydık, 2004). Children, who do not receive enough stimulus during pre-school period, are at risk in terms of cognitive development, academic performance, and social and emotional aspects (Brooks-Gunn & Duncan, 1997; Pines, 1982). The fact that children from a low socioeconomic level are not exposed to enough stimulus creates an adverse impact on their pre-literacy skills and future reading performances (High et al. 2000). The research found that children from higher SES families had better literacy skills than from lower SES families (Burchinal et al., 2002; Salaway, 2008). Speech and language therapist" pointed out that it is important to develop early literacy skills in minimizing literacy and language-related problems of children from low socio-economic status in the future (Menyuk&Chesnick, 1997; Van Kleeck &Schuele, 1987).

Children start discovering and using prints around them before primary education. These attempts of children are not pre-literacy skills but the first step of their life-long literacy development (Whitehead,

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2007). Print awareness involves the child realizing that oral language can turn into written language, print is made up of symbols, knowing how to hold a book, realizing how to turn pages of a book and where to start reading from (Clay, 2000). Such behaviors and concepts are acquired through social interaction in early ages. Children acquire their first literacy experience at a very early age by observing and interacting with literate people around them and by coming across with environmental print (Sulzby and Teale, 1991). Even though pre-school children are not expected to formally read a print, they need to be able to learn the concepts of print and be aware of print (Ezell & Justice, 2005). Research conducted with pre-school children found that the most important skill in predicting a child's future reading skills is print awareness (Farver, Nakamoto &Lonigan, 2007; Kelman, 2006). Children who acquire print recognition skills can understand the relationship between oral language and written language. The understanding of the relationship between written language and oral language is considered the first step of learning how to read (Ezell & Justice, 2005). For these reasons, print awareness plays a key role in literacy development.

Researches show that children can recognize print around them from three years old (Wortham, 2005). Even though it is not reading, this recognition is of vital importance for successful reading (Machado, 2003; Smith, 2006). We can provide stickers, logos, road signs, billboards, and names of dishes in a restaurant's menu as examples for environmental print. Such prints help children to understand the meaning and function of prints. It is recognized that children can better identify letters when they interact with environmental print (Adams, 1994). Making use of such prints in reading-writing activities motivates children on story-writing and reading activities and helps them gain experience in writing in the pre-school period, thus making them recognize letters in various sizes, shapes, and colors (Marsh, 2004; Millard & Marsh, 2001). Environmental prints do not only improve early literacy skills, but they also create opportunities for children to discover prints around them. Environmental prints, which little children come across almost everywhere, enable children to recognize letters in these prints and therefore improving their early literacy skills. For this reason, it is reported that environmental print help pre-school children to learn letters and words (Share & Gur, 1999). However, there are only a few studies on how environmental print improves early literacy (Neumann, Hood, & Ford, 2013; Prior, 2003; Salewski, 1995; Vera, 2011). For example, Prior (2003) studied how the use of environmental print for pre-school children contributed to letter awareness and reading environmental print. For this reason, 107 pre-schoolers were divided into two intervention groups and one control group. The direct teaching method (show the letters in the logo, make a logo book) was adopted for the first intervention group, the other intervention group was introduced letters in logos through games, while no intervention was applied for the control group. After the intervention, the two intervention groups read more environmental prints than the control group. Prior (2003) also observed that children from high-SES were more willing to work with environmental print than children from low-SES. Vera (2011) studied the impact of environmental print on alphabet knowledge and the concept of print. 56 pre-school children from low socio-economic levels were divided into two groups and both groups were administered a nine-week intervention program. In the experimental group, popular culture prints (e.g. name of a cartoon character), which are familiar to children, were used and in the control group, life and social sciences prints (e.g. names of seasons, cloud, moon) were used. As a result of the research, it was observed that the alphabet knowledge and print awareness of experimental group children were more developed than of control group children. It was much more effective to use popular culture prints that attract the attention of children who are available at home than unappealing science prints. No research has been found in Turkey that focuses on the effect of environmental print on early literacy.

Early literacy skills of little children develop in interaction with each other. Therefore, as print awareness of these children develops, their phonological awareness, letter knowledge, verbal language, and comprehension skills will also improve (Morrow, 2005). To prevent children, especially

the ones at risk, to fail in reading-writing and academic fields in the future, it is important to support these skills at an early age. Another important skill in the early literacy development of pre-school children is print awareness. One way to make sure that children gain print awareness is to have them interact with interesting environmental prints that they come across almost everywhere. The purpose of this study is to improve the early literacy skills of children from low socioeconomic levels by having them interact with environmental print. This study is thought to help improve the early literacy skills of at-risk pre-school children through environmental print and in raising the awareness of pre-school teachers through print awareness practices.

For this purpose, below are the questions to be answered:

· Is there a significant difference between the pretest and posttest scores of experimental group children from the Test of Early Language Development (TELD) recipient language test, print awareness control list and letter, and name writing?

· Is there a significant difference between the pretest and posttest scores of control group children from the TELD recipient language test, print awareness control list and letter, and name writing?

· Is there a significant difference between posttest scores of test and control group children from the TELD recipient language test, print awareness control list and letter, and name writing?

· Is there a significant difference between the posttest and follow-up test scores of experimental group children from the TELD recipient language test, print awareness control list and letter, and name writing?

METHOD

Research Model

This study adopted the experimental model with a pretest/posttest/followup test design with a control group. The experimental pattern brings out cause-and-effect relations of the variables whose effect will be measured after applications performed under certain rules and conditions. Another important point in these studies is the selection of participants (Oral and Süer, 2017). For this reason, in experimental patterns with the pretest-posttest control group, both groups undergo measurements before and after the experiment (Büyüköztürk, 2012). In actual experimental patterns, subjects should be assigned to test and control groups objectively. However, in educational settings, it is quite difficult to assign subjects to groups objectively (Büyüköztürk, 2012). At this point, quasi-experimental patterns come into play. In quasi-experimental patterns, the selection of test and control groups are done based on preliminary measurements and criteria. In this study, some criteria were identified for participation and the sexes of children in test and control groups were matched. ***The environmental print intervention*** was administered to experimental group children, while control group children continued their regular curriculum.

Study group

The study group was made up of children who attend kindergartens in central Diyarbakır that are affiliated to the Ministry of National Education for the academic year of 2018-2019. A list of central district kindergartens was received from Diyarbakır Provincial Directorate of National Education to create the sample group. The lists were reviewed, another list of schools of low socioeconomic status at the same district was drawn up and four schools were randomly selected. Then, information about the schools' socio-economic status was verified through interviews held with administrators and teachers of the listed schools. There are 11 girls and 9 boys in both test and control groups. The mean age of children in the test and control groups is 64 months. According to the information received, the income level of families of children of test and control groups ranged between TRY 1500 and 3500.

The education level of most of the parents was secondary education while the majority of the mothers were stay-at-home moms and fathers were workers.

Data Collection Tools

Demographic Information Form

A "General Information Form" that was developed by the researcher was used in this study to collect general information about the children and their families. This form includes information such as the marital status of the parent, number of children, date of birth, sex and birth order of the child, number of siblings, income level, professions and educational background of parents. Forms were delivered to families through teachers.

Test of early language development - Turkish (TELD-T)

TELD-T aims to measure the oral language skills of children between 2 and 7 years of age (Topbaş &Güven, 2011). It is the Turkish adaptation of the Test of Early Language Development (TELD-3; Hresko, Reid, & Hammill, 1999). It consists of 76 items to measure the semantics, morphology, and syntax and has two subtests; receptive and expressive language. Reliability measures for receptive and expressive language subtests revealed that test-retest reliability was .96-.93; inter-rater reliability was .99 -.99; and internal consistency coefficient was .94-.92, respectively. Validity measures showed that receptive language subtest's correlation with WISC-R verbal score was .66 ($p = .001$) and with PPVT was .76 ($p = .001$) while expressive language subtest's correlation with WISC-R verbal score was .53 ($p = .001$), and with PPVT was .73 ($p = .001$) (Topbaş &Güven, 2011). Standard scores on receptive language, expressive language, and general language development are obtained from the test. In this study, general language development scores were used.

Pre-School Children's Print Awareness Evaluation Check List

The Pre-School Children's Print Awareness Evaluation Check List, which was developed by Şimşek (2011), was use to evaluate print awareness of children. The checklist was prepared to evaluate the level of knowledge of pre-school children on book concepts, the function of print, the shape and direction of print, sentences, words, and letters. Pre-School Children's Print Awareness Evaluation Check List has 17 questions in total. For each question, the score is 1 for correct or 0 for incorrect. The highest and lowest scores of the checklists are 17 and 0, respectively. The reliability of the test in terms of internal consistency was examined with the help of the KR-20 reliability coefficient. The KR-20 reliability coefficient of test was found to be 0.72 and the test was found to have internal consistency. It has been concluded that the measurement made with the "Checking the Writing Awareness of Preschool Children" is valid and reliable.

Letter Writing

Children will be asked 15 random letters for the study. For example, "can you type down the letter 'M' for me?" The score is 1 point for each correctly typed letter. A child will be able to score a maximum of 15 points from this test.

Name writing

Children will be given a pencil and a paper and asked to type their names. Scoring:

0: When there is no answer or where there are random scribbles on the paper.

1: Vertical or horizontal scribbles.

2: At least two separate circles, points or lines.

3: There are simple characters with various forms such as point, circle, square, short lines and triangle.

4: There are simple characters written from right to left.

5: The first letter of the name is on the paper and other letters are represented by simple characters.

6: The first letter of the name is on the paper and other letters are not simple but can be represented by complex characters that contain both fake and real letters.

7: The first letter of the name is correct and random letters represent other sounds of the name.

8: At least half of the name is typed correctly.

9: Name is typed correctly.

Data Collection

Implementation Process

The intervention lasted a total of 8 weeks. Teachers and families were asked about the names of children's favorite products. First, a book was prepared to contain original packaging prints and standard prints of 10 products (for example the packaging print (logo) and standard print of a chocolate bar brand on the same page). Experimental group children were divided into groups of five. For 5 weeks, children were introduced to three letters each week and for the last three weeks, these letters were repeated. Monitoring activities were carried out two months later. A quiet room free of distracting stimuli was identified in schools. Desks and chairs were organized accordingly for the implementation. Before the implementation, the researcher had a little chat with students and informed them about the activities.

- For the first activity, logos and prints that include three target letters were introduced. First, the researcher read the names of the products aloud and asked children to repeat afterward. After the introduction of the product names, the researcher sat next to the children, said the names and sounds of target letters in product names and wrote these letters in the air. While doing so, the researcher asked children to follow with their fingers. After this activity, the researcher said the target letters and the names and sounds of these letters and children wrote these letters using play dough.
- The second activity focused on introducing letters embedded in environmental print. For example, after showing children the original logo of the Metro chocolate bar, children were asked to show the letter "M", the sound "mm", and write the letter "M" in the air. Children were helped out when they failed to do so. Other target letters were introduced using environmental print.
- For the third activity, the researcher showed the target letter on the product and asked children to type this letter down using the magnetic board.
- For the final activity, the researcher showed the letter on the product and said the sound and name of this letter. Then, the researcher asked children to type this letter between the two lines. When they were unable to type, the researcher showed how to do so.
- All these activities for five weeks (three target letters each week) and the final three weeks all of the letters were repeated.

Data Analysis

Data collected in the study was analyzed using the IBM SPPS 22 package program. To serve the purpose of the study to find answers to research questions, first, it was checked if data presented normal distribution. The coefficient of skewness was found to be between -3.6 and -4.8 and the coefficient of kurtosis to be between -8.2 and -9.4. According to the Kolmogorov-Smirnov test, not all measurements presented normal distribution (K-S(z)=0.00; p<.00) (Pallant, 2015).

The Wilcoxon Signed Rank Test (matched pair) was put to use to compare TELD scores, print awareness, and letter and name writing skills of test and control group children. ***The Mann Whitney U test*** was put to use to compare pretest and posttest score averages of test and control group children on TELD, print awareness, and letter and name writing.

Effect sizes were also checked during group comparisons. For the Mann Whitley U and Wilcoxon Signed Rank Tests, the effect size was calculated by dividing the *z* value by the square root of the sample size (Pallant, 2016). According to Cohen's criteria, .1 indicates small, .3 medium and .7 large effect size (Cohen, 1998).

FINDINGS

This study aimed to improve the early literacy skills of children from low socio-economic status by having them interact with environmental print. For this aim, below are the findings of the study about research questions.

The Mann Whitney U-Test was used to see whether there were any significant differences between pretest score averages of experimental and control group children in TELD, print awareness, and letter and name writing tests. ***The Wilcoxon Signed Rank Test (matched pair)*** was put to use since the comparison of average scores of pretest and posttests of test and control group children in TELD, print awareness and letter and name writing test and posttest and follow-up test of test and control group children in TELD, print awareness and letter and name writing test did not present normal distribution.

Table 1
Results of the pretest scores of children

	Group	N	$\bar{X}$	SD	Mean Rank	Rank Sum	U	p	Effect
TELD	Experimental	20	97.45	6.93	19.85	397	187	.72	.003
	Control	20	98.30	6.85	21.15	423			
Print Awareness	Experimental	20	7.0	2.98	21.28	425.50	184.50	.66	.085
	Control	20	6.8	2.39	19.73	394.50			
Letter writing	Experimental	20	4.5	2.11	22.80	456.00	154.00	.22	.043
	Control	20	3.65	1.98	18.20	364.00			
Name Writing	Experimental	20	2.85	1.08	25.48	529.50	130.05	.45	.007
	Control	20	2.5	1.1	18.53	290.50			

Table 1 shows that pretest scores of experimental and control group children in TELD, print awareness and name and letter writing are quite close (p>.05). *The Mann Whitney U-Test* found no significant difference between the mean pretest scores of control and experimental groups. These results show that children are at similar levels in terms of recipient language and early writing skills.

Table 2
Results of the posttest scores of children

	Group	N	$\bar{X}$	SD	Mean Rank	Rank Sum	U	p	Effect
TELD	Experimental	20	104.00	.00	27.50	550.00	60	.00	.26

	Control	20	98.3	6.98	13.50	270.00			
Print Awareness	Experimental	20	15.20	2.56	21.28	425.50	48	.00	.27
	Control	20	10.95	2.39	19.73	394.50			
Letter writing	Experimental	20	10.90	2.55	30.15	603.00	7.0	.00	.69
	Control	20	3.85	2.20	10.85	217.00			
Name writing	Experimental	20	7.05	1.90	26.48	529.50	80.50	.00	.43
	Control	20	20	4.6	2.21	14.53			

Table 2 shows significant differences ($p<.05$) in all posttest scores of test and control group children in TETLD, print awareness and name and letter writing. The scores of all tests and mean ranks of the experimental group children are higher than of the control group. It is striking that the effect size between groups is high (.69) for writing letters.

Table 3
Comparison of pretest and posttest average scores of experimental and control group children

		Pretest - Posttest	N	Mean Rank	Rank Sum	*z*	*p*	*Effect*
Experimental	TELD	Negative Rank	1	10.00	10.00	-3.71	.00	. 82
		Positive Rank	16	8.94	143.00			
		Ties	3					
Control		Negative Rank	2	3.50	7.00	-.13	.89	.02
		Positive Rank	3	2.67	8.00			
		Ties	15					
Experimental	Print Awareness	Negative Rank	2	4.25	8.50	-3.42	.00	.76
		Positive Rank	15	9.63	144.50			
		Ties	3					
Control		Negative Rank	0	.00	.00	.00	.10	.00
		Positive Rank	0	.00	.00			
		Ties	20					
Experimental	Letter Writing	Negative Rank	0	.00	.00	-3.95	.00	.88
		Positive Rank	19	10.50	210.00			
		Ties	1					
Control		Negative Rank	0	.00	.00	-1.65	.08	.30
		Positive Rank	2	2.50	10.00			
		Ties	18					
Experimental	Name Writing	Negative Rank	1	1.00	1.00	-2.39	.01	.53
		Positive Rank	7	5.00	35.00			
		Ties	12					
Control		Negative Rank	1	1.50	1.50	-1.28	.19	.28
		Positive Rank	3	2.83	8.50			
		Ties	16					

Based on the results set out in Table 3, the scores in sub skills of experimental group children increase significantly, while the scores of control group children did not change significantly.

Table 4
Comparison of posttest - follow-up test average scores of experimental group children

	Posttest - Follow-up Test	N	Mean Rank	Rank Sum	*z*	*p*	*Effect*
TELD	Negative Rank	3	2.00	6.00	-.41	.67	0.09
	Positive Rank	2	4.50	9.00			
	Ties	15					
Print Awareness	Negative Rank	0	.00	.00	.00	1	0
	Positive Rank	0	.00	.00			
	Ties	20					
Letter Writing	Negative Rank	0	.00	.00	.00	1	0
	Positive Rank	0	.00	.00			
	Ties	20					
Name Writing	Negative Rank	2	1.51	1.52	.-52	.71	0.01
	Positive Rank	1	2.84	8.52			
	Ties	17					

Table 4 showed no significant difference between posttest and follow-up test scores of experimental group children.

DISCUSSION

This study examined the impact of environmental print intervention on receptive language and early literacy skills of kindergarten children from the low SES who are under risk. Experimental group children were administered a pretest before the intervention program. The pretest results showed that print awareness and receptive language skills levels of experimental group children were mostly low. For example, the average score of children from the print awareness test, the maximum score of which is 17, was 7. The results show that recipient language and early literacy skills of children, who received an intervention in environmental print, improved both right after and two months after the intervention. These results support earlier research results demonstrating that interventions using environmental print contribute to the development of early literacy (Neumann, Hood & Ford, 2013, Prior, 2003; Salewski, 1995; Vera, 2011; Wepner, 1985).

The intervention in this study lasted only for 8 weeks - 30-minute sessions, five days a week- and has been effective. It is thought that the effectiveness of the environmental print intervention is because children are familiar with these prints and that they are appealing to them. Dyson (2003) noted that environmental print that children encounter daily is effective in supporting low-SES children's early literacy skills. Similarly, the fact that children encounter environmental print almost everywhere plays an important role in the effectiveness of this intervention (Molfeseet al., 2006). Informal meetings held with teachers and participating children and observations show that experimental group children showed more interest towards print from day one and pointing to letters they learned on their clothes, in school and class board, and on food packaging. Teachers also mentioned that children, who participated in the study, tried to write down their names. Another proof of the effectiveness of the program is that experimental group children pointed out that the program was fun and they would want to do the same activities in class. Related research has shown that teaching activities involving environmental print are a source of motivation for improving early literacy skills, thus also improving children's print awareness (Dyson, 2003; Pang, 2001).

The effectiveness of environmental print intervention on early literacy and recipient language skills can also be explained by the fact that the intervention appeals to many senses. This study made use of environmental print in activities that appealed to several senses of children such as having them write letters using play dough, on magnetic boards and in air. Pre-school teaching methods that appeal to many senses have also been found to be effective on early literacy skills in the pre-school setting

(Molfese et al., 2006). According to Molfese et al. (2006), teaching methods that appeal to many senses of children, low SES children, are effective in improving reading skills.

CONCLUSION

As a result, the environmental print intervention that was a part of this study has proven to improve early literacy and recipient language skills of low SES children. Studies have shown that socio-economic level is an effective variable in the development of early literacy skills and in this context, being involved in low SES constitutes a risk factor (Bursuck & Damer, 2007; Dickinson & Tabors, 2001). Pre-school children, who are academically at risk, are exposed to less environmental prints compared to their peers and this has an impact on their literacy skills in the future (Shaffer & McNinch, 1995).

RECOMMENDATIONS

In future studies, it is thought that it would be important to support these results by carrying out similar studies to larger groups and in different regions. It is inevitable for cognitive gains to remain short-term if families, who are capable of supporting children constantly, are not included in intervention efforts (Kağıtçıbaşı, 1998). It is thought that interventions that include families would not only benefit the child but also his/her immediate circle, especially in Turkey, where family ties are quite tight (Kağıtçıbaşı, 2010). For the reasons explained above, it will be particularly important for teachers, working in low SES regions, to get informed on how families can contribute to their children's early literacy skills at home through regular on-the-job seminars.

REFERENCES

Adams, M., J. (1994). *Beginning to read, thinking and learning about print*. Cambridge: MIT Press.

Baydık, B. (2004). Filizlenen okuryazarlık ve desteklenmesi. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Özel Eğitim Dergisi*, *4*(02), 77-89.

Brooks-Gunn, J., & Duncan, G. J. (1997). The effects of poverty on children. *Future of Children, 7*, 55–71.

Bursuck, W. D., & Damer, M. (2007). *Reading instruction for students who are at risk or have disabilities*. Boston: Pearson/Allyn and Bacon.

Burchinal, R. M., Peisner - Feinberg, E., Pianta, R., & Howes, C. (2002). Development of academic skills from preschool through second grade: Family and classroom predictors of developmental trajectories. *Journal of School Psychology. 40*(5), 415-436.

Büyüköztürk. Ş., (2012). *Deneysel Desenler*. Ankara:Pegema Yayıncılık.

Clay, M. M. (2000). *Concepts about print: What have children learned about the way we print language?*. NH: Heinemann.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*, 2nd ed. Hillsdale, NJ: Erlbaum

Dickinson, D. K., & Tabors, P. O. (2001). *Beginning literacy with language: Young children learning at home and school*. Baltimore: Paul H Brookes Publishing.

Dyson, A. (2003) ‘‘Welcome to the Jam": Popular Culture School Literacy and the Making of Childhoods'. *Harvard EducationalReview*, 328-61, http://www.hepg.org/her/abstract/76 (consulted May 2019).

Ezell, H. K., & Justice, L. M. (2005). *Shared storybook reading: Building young children's language and emergent litter*. Baltimore, MD: Paul H. Brookes.

Güven, O. S., (2009). *Erken Dil Gelişimi Testi-Üçüncü Edisyon'un [Test Of Early Language Development-Third Edition (TELD-3)] Türkçeye uyarlama, geçerlik ve güvenirlik ön çalışması.* Yayınlanmamış Yüksek Lisans Tezi,Anadolu Üniversitesi, Eskişehir.

Farver, J. M., Nakamoto J., & Lonigan C. J. (2007). Assessing preschoolers' emergent literacy skills in English and Spanish with the get ready to read! Screen tool. *Annals of Dyslexia, 57(2),* 161-178.

High, C. P. Lagasse, L. Becker, S. Ahlgren, I. & Gardner, A. (2000). "Literacy promotion in primary care pediatrics: can we make a difference?", *Pediatrics*, 105, 4,; 927-934.

Hresko, W. P., Reid, D. K. & Hammill, D. D. (1999). *Examiner's manual: Test of Early Language Development*. Austin, TX: Pro-ed.

Lonigan, C. J., Burgess, S. R., &Anthony, J. L. (2000). Development of emergent literacy and early reading skills in preschool children: Evidence from a latent- variable longitudinal study. *Development Psychology*, *36*(5), 596-613.

Kağıtçıbaşı, Ç. (2010). *Benlik, aile ve insan gelişimi: Kültürel psikoloji*. İstanbul: Koç Üniversitesi Yayınları.

Kağıtçıbaşı, Ç. (1998). *Kültürel psikoloji: Kültür bağlamında aile ve insan gelişimi*. İstanbul: YKY Yayınları.

Kelman, M. E. (2006). *An investigation of preschool children's primary literacy skills.* Unpublished doctoral thesis, University of Wichita State: USA.

Machado, J. M. (2003). *Early childhood experiences language arts emerging literacy.* Canada: Delmar Learning.

Matthews, D.P. (1999). *What is reading readiness?* Access Web: http://www.sil.org/lingualinks/ literacy/ reference materials/ glossary of literary terms/whatisreadingreadiness.html.

Marsh, J. (2004). Techno-Literacy Practices of Young Children. *Journal of Early Childhood Research, 2*(1), 51–66.

Menyuk, P., & Chesnick, M. (1997). Metalinguistic skills, oral language knowledge, and reading. *Topics in Language Disorders, 17*(3), 75-87.

Millard E., & Marsh J., (2001). Sending Minnie the Minx Home: Comics and Reading Choices'. *Cambridge Journal of Education, 31*(1), 25–38.

Molfese, V. J., Beswick, J., Molnar, A., & Jacobi-Vessels (2006), Alphabetic skills in preschool: A preliminary study of letter naming, *Developmental Neuropsychology*, *29*(1), 5–19.

Morrow, L.M. (2005). *Literacy activities for early childhood classrooms – Supplement for Literacy development in the early years: Helping children read and write (5th ed.).* Boston, MA: Allyn& Bacon.

Neumann, M. M., Hood, M., Ford, R. M., & Neumann, D. L. (2012). The role of environmental print in emergent literacy. *Journal of Early Childhood Literacy*, *12*(3), 231-258.

Neumann, M.M., Hood, M. & Ford, R.M., (2013). Using environmental print to enhance emergent literacy and print motive, *Reading and Writing, 26*(5), 771-793.

Oral, B., & Süer, S. (2017). Program değerlendirmede kullanılan araştırma yöntemleri ve veri toplama araçları (ss: 510-536). *Eğitimde Program Geliştirme ve Değerlendirme içinde*. (Editör: Oral, B. & Yazar, T). Ankara: Pegem Akademi.

Pallant, J. (2016). *SPSS survival manual: A step by step guide to data analysis using SPSS*. Allen & Unwin: Sydney

Pang V., (2001) *Multicultural Education: A Caring-Centered Reflective Approach.* New York, NY: McGraw-Hill.

Pines, D. (1982). The relevance of early psychic development to pregnancy and abortion. *International journal of psycho-analysis*, *63*, 311-319.

Prior, J. L. (2003). *Real world print in the classroom: meaningful connections for learning to read.* Unpublished Doctoral Dissertation, Arizona State University, Arizona.

Salaway, L. J.(2008). *Efficacy of a direct instruction approach to promote early.* Unpublished PhD thesis. Duquesne University. Department of Counseling, Psychology and Special Education, Pittsburgh.

Salewski, W. C. (1995). *The effect of environmental print reading on the literacy development of kindergarten children.* Unpublished Master's Dissertation, The University of British Columbia.

Shaffer, G., & McNinch, G. (1995). Parents' perceptions of young children's awareness of environmental print. In W. Linek& E. Sturtevant (Eds.), *Generations of literacy: The seventeenth yearbook of the college reading association* (pp. 278-286). Washington, DC: National Academy Press.

Share, D. L., & Gur, T. (1999). How reading begins: A study of preschoolers' print identification strategies. *Cognition and Instruction, 17*, 177–213.

Smith,T. J.,(2006). *Early child development. (*4th ed). United States of America: Pearson Education.

Snow, C. E., Burns, S., & Griffin, P. (1998). *Preventing reading difficulties in young children.* Washington, DC: National Academy Press.

Storch, S. A., &Whitehurst, G. J. (2002). Oral language and code-related precursor to reading: Evidence from a longitudinal structural model. *Developmental Psychology*, *38*, 934-947.

Sulzby, E., & Teale, W. (1991). Emergent literacy. *Handbook of reading research*, *2*, 727-757.

Şimşek, Ö. (2011). *60-72 aylık çocukların yazı farkındalığı ve yazmaya hazırlık becerilerinin gelişiminde okuma yazmaya hazırlık programının etkisinin incelenmesi.*Yayımlanmamış Doktora Tezi, Ankara.

Topbaş, S., & Güven, S. (2011). Türkçe erken dil gelişimi testi (TEDİL). *Ankara: Detay Yayıncılık*.

Van Kleeck, A., & Schuele, C. M. (1987). Precursors to literacy: normal development. *Topics in Language Disorders, 7*(2), 13-31.

Vera, D. (2011). Using popular culture print to increase emergent literacy skills in one high-poverty urban school district. *Journal of Early Childhood Literacy, 11*, 307–330.

Wepner, S. B. (1985). Linking logos with print for beginning reading success. *The Reading Teacher*, *38*(7), 633-639.

Whitehurst, G. J. & Lonigan, C. J. (1998). Child development and emergent literacy, *Child Development, 69(3),* 848-872.

Whitehead, M. R. (2007). *Developing language and literacy with young children*. (3th ed). London: Paul Chapman Publishing.

Wortham, S. C. (2005). *Early childhood curriculum.* New Jersey, Columbus, Ohio: Pearson Merill Prentice Hall.