





# International Journal of Contemporary Educational Research (IJCER)

[www.ijcer.net](http://www.ijcer.net)

## The Effect of Project Approach-Based Education on Children's Early Literacy Skills

Tuğçe Akyol<sup>1</sup>, Fatma Betül Şenol<sup>2</sup>, Münevver Can Yaşar<sup>3</sup>

<sup>1</sup>Afyon Kocatepe University,  0000-0002-5860-9236

<sup>2</sup>Afyon Kocatepe University,  0000-0002-4844-4968

<sup>3</sup>Alaaddin Keykubat University,  0000-0003-1987-8393

Article History

Received: 16.11.2021

Received in revised form: 27.02.2022

Accepted: 03.03.2022

Article Type: Research Article

### To cite this article:

Akyol, T., Şenol, F. B., & Can Yaşar, M. (2022). The effect of project approach-based education on children's early literacy skills. *International Journal of Contemporary Educational Research*, 9(2), 248-258. <https://doi.org/10.33200/ijcer.1024470>

This article may be used for research, teaching, and private study purposes.

Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden.

Authors alone are responsible for the contents of their articles. The journal owns the copyright of the articles.

The publisher shall not be liable for any loss, actions, claims, proceedings, demand, or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of the research material.

## The Effect of Project Approach-Based Education on Children's Early Literacy Skills

Tuğçe Akyol<sup>1\*</sup>, Fatma Betül Şenol<sup>2</sup> Münevver Can Yaşar<sup>3</sup>

<sup>1</sup>Afyon Kocatepe University

<sup>2</sup>Afyon Kocatepe University

<sup>3</sup>Alaaddin Keykubat University

### Abstract

This study aimed to determine the effect of project-based education on children's early literacy skills. Experimental design with pre-test-post-test control group was used in the research. The study group of the research consisted of a total of 36 children in the experimental (n: 18) and control (n: 18) groups, who attended independent kindergartens affiliated to the Ministry of National Education in the city center of Afyon, which were randomly selected from the population. As a data collection tool in the study, the "General Information Form" developed by the researchers to collect personal information about children and families (gender, number of siblings, duration of pre-school education, parents' ages, educational status, occupation) and to evaluate early literacy skills the "Test of Early Literacy" (TEL) developed by Kargin, Güldenöglü and Ergül (2015) were used. A project-based education program was applied to the children in the experimental group, 3 days a week for 8 weeks. A statistically significant difference was found between the pre-test and post-test mean scores of children in the experimental and control groups on all TEL and its subdimensions, in favor of the scores they obtained in the post-test. Because of the positive change in the experimental and control groups, the differences between the pre-test and post-test scores were compared between the children in the experimental and control groups. As a result of the comparison, a statistically significant difference was found in favor of the experimental group.

**Keywords:** Early literacy, preschool education, project approach.

### Introduction

The pre-school years encompass the period when an individual's development and learning is at its highest from the time of birth to age six. In this period, children realize with great curiosity and excitement that there are different keys to recognizing their environment, making sense of it, and interpreting the world. One of these keys is reading and writing the stimuli around (Enerem, 2018; Özdemir & Bayraktar, 2015). From reading a written text to using a technological tool, literacy skills that are used in all areas of life and make life easier are used throughout life (Barratt Pugh, 2000). Early literacy skills, which are a prerequisite for children to acquire literacy skills, should be examined (Karaman, 2014).

Early literacy includes all the knowledge, skills and attitudes that children have until they learn to read and write (Reese et al., 2003; Rhyner et al., 2009). In the literature on the concept of early literacy, different expressions such as "burgeoning, developing or developing literacy and the incubation period in primary literacy teaching" are used (Whitehurst & Lonigan, 1998). It focuses on different perspectives on early literacy, such as developmental (Strommen & Mates, 2000), knowledge and skills components (Van Kleeck, 1998), and environmental impact (McNaughton, 1995; Wasik & Hendrickson, 2004). In line with these perspectives, early literacy skills are included in the early literacy skills of verbal language skills and vocabulary, alphabet and letter knowledge, phonological awareness, print awareness within the scope of reading and writing skills (Elliott & Olliff, 2008; Neuman & Dickinson, 2001).

For reading to take place, children must first be in a developmental process that includes recognizing and feeling the phonem, establishing a relationship between letters and phonem, and understanding what they are writing (Oktay & Unutkan, 2003). This development is expressed in the form of readiness to read. All the knowledge and

\* Corresponding Author: Tuğçe Akyol, [akyol.tugce@gmail.com](mailto:akyol.tugce@gmail.com)

skills that children need to acquire to be ready to read can be listed as a spoken language, visual and auditory perception, establishing cause-effect relationships, generalization and language skills (Girgin, 2003). Verbal language skills and vocabulary are called the ability to use words in the communication process and are defined as expressions used between reading, writing, speaking and listening and perceived (Ranweiler, 2004; Rathvon, 2004). Another important element of learning words and gaining awareness is listening and speaking. Children understand, evaluate, and organize nonverbal and verbal messages by listening and speaking. Listening and speaking is a skill that should be developed systematically in children. These skills have an important place in developing children's language skills and vocabulary (Taşer, 2012).

Alphabet knowledge is knowing that each letter has a different phonem and children could match letter names with written symbols. With the acquisition of alphabet knowledge, children comprehend the names of the letters, which have a visual, written form, and the phonem they represent, and the relationship between all these (Pence, 2006; Yumuş, 2018). Phonological awareness is the ability to comprehend the phonem equivalent of alphabet knowledge in verbal language, the similarity and difference of phonemes. Phonological awareness is the ability to separate and manipulate words into syllables and syllables into phonemes (Griffith et al., 2008; Schnobrich, 2009). Phonological awareness is the ability to distinguish the first and last phonemes of a word, to pronounce the first/last phoneme of a word, to add a phoneme to the beginning/end of a word, to group words by beginning/end phonemes, to take a part of a word and use it in place of a part of another word, to pronounce the syllables of a word, and to name the number of phonemes (Hoover, 2002). Written awareness is the ability to understand the structure, rules, and function of written language. In this process, children acquire concepts that will form the prerequisites for writing skills such as holding the book correctly, turning the pages in the right direction, knowing the direction of the writing, knowing where to start reading the text (Clay, 2000; Justice & Ezell, 2004).

Early literacy skills that support the child's lifelong learning process and academic skills (Bredenkamp, 2015; Dickinson & Neuman, 2018) should be evaluated as a whole to effectively support them. At the same time, it is important for preschool teachers to plan and implement effective processes to acquire early literacy skills (Kargin, Güldenoğlu & Birkan, 2017). National (Çetin, 2019; Güldenoğlu, Kargin, & Ergül, 2016; Turan & Akoğlu, 2011; Uyanık & Alisınanoğlu, 2016; Yalman, 2020) and international (Broemmel et al., 2015; Justice & Ezell, 2004; Kammermeyer et al., 2016; Kumar Roul, 2014) experimental studies have been carried out on the changes in the dimensions of early literacy skills. Studies examining early literacy research and postgraduate theses emphasize that more comprehensive evaluations should be made in Turkey (Altun & Sari, 2018; Tanju Aşlışen & Hakkoymaz, 2020). The constructivist, child-centered and process-oriented project approach, which enables children to explore the world from an early age, is defined as a set of activities carried out under the guidance of the teacher on a topic related to real-life situations determined in line with the interests of children (Helm & Katz, 2001; Katz & Chard, 2000). This approach positively affects cognitive development in terms of problem-solving skills, cause-and-effect relationship making, and visual perceptual skills; language development in terms of verbal expression of what children know and wonder; social-emotional development in terms of play, movement, and art activities; and motor development in terms of fine and gross motor skills (Helm, 2004; Katz & Chard, 2000; Temel et al., 2005). During the project study, teachers should include activities and games that improve children's awareness of phonemes and writing, processes that improve children's questioning and listening skills when a guest expert comes to the classroom, and written/visual materials that children can examine in the classroom, reading books that relate to the topic studied in the classroom, and children's early reading skills. It also enables the development of their skills (Helm, 2004). In project studies, children begin to take an interest in literacy and experience literacy skills while doing in-depth research on a research topic they are interested in. Project studies consist of initiation, implementation and termination phases. In the initial phase, the topic is determined according to the interests and needs of the children, their experiences, the characteristics of the family and the society to which they belong, and all the necessary preparations are made. All activities planned during the implementation phase are carried out, field trips are made, and guest experts are called. In the finalization phase, the project process is evaluated, the resulting products are exhibited, and sharing is made with families, other teachers at the school, children, and staff (Katz & Chard, 2000; Tahta & İvrendi, 2007; Temel et al., 2005).

Project study should not be seen as a separate issue but as an integral part of the training program (Katz, 1998). Therefore, project studies can be integrated into the training program being implemented. In some studies on the project approach, it had been concluded that children positively support the skills of different developmental areas (Arıkan & Kimzan, 2016; Gizir Ergen, 2013; Metin & Aral, 2014; Oğuz, 2012; Yıldız Bıçakçı, 2009). Çağlar Kabacık and Deretarla Gül (2016) concluded that as a result of the project approach-based vegetable applications they conducted with kindergarten children, the children's level of knowledge about vegetables increased and skills such as problem solving, language, social adaptation, and integration of acquired knowledge into daily life developed. Arıkan (2020) examined the experiences of the project studies carried out in a kindergarten where disadvantaged children attend, and determined that the cognitive, language and social-emotional development of

the children improved, the awareness of the families increased, and the teachers adopted some of the practices that they learned about the project implementations. In the literature, it was seen that only one of the studies carried out to support children's early literacy skills is related to an alternative approach. In the study conducted by Kaynak Ekici (2017), it was concluded that the pyramid method was effective on the language and early literacy skills of five-year-old children. There is a need for a study that examines the impact of project-based practices on early literacy skills. Based on these considerations, this study aimed to examine the effect of the project-based education program on the early literacy skills of five-year-old children. Within the scope of this study, project studies were integrated into the Ministry of National Education Pre-School Education Program (2013), which is being implemented in Turkey, by utilizing the integrative and complementary feature of the project approach.

## **Method**

### **Research Design**

Experimental design with pre-test-post-test control group was used in the research. Experimental studies are studies to test the effect of the differences created by the researcher on the dependent variable. The main purpose of experimental designs is to test the cause-effect relationship between the variables. (Buyukozturk et al., 2010).

The dependent variable in the study's experimental design is the early literacy skills of 5-year-old children attending a pre-school education institution. The independent variable is Project-Based Education, whose effect was examined on children's early literacy skills.

### **Study Group**

The research study population consists of children with typical development aged 5 years old, who attend kindergartens affiliated to the Afyonkarahisar province center, Directorate of National Education in the 2018-2019 academic year. The research study group consisted of children who were randomly selected from among the population, attending an independent kindergarten affiliated to the Ministry of National Education in Afyon city center and had not been given a project-based education program before. In this direction, the selected study group consisted of 36 children, including the experimental (n: 18) and control (n: 18) groups.

### **Data Collection Tools**

As a data collection tool in the study, the "General Information Form" and the "Test of Early Literacy (TEL)" were used.

#### *General Information Form*

General Information Form developed by researchers. The form included questions about the child's gender, birth order, number of siblings, parents' age, education level of the parents, and the parents' profession.

#### *Test of Early Literacy (TEL)*

The Test of Early Literacy assesses the early literacy skills of five-year-old children attending kindergarten. TEL consists of seven dimensions and 102 items, namely Receptive Language, Expressive Language, Function Knowledge, Category Naming, Letter Knowledge, Phonological Awareness, and Listening Comprehension. The Test of Early Literacy was developed by Kargin, Güldenoğlu, and Ergül (2015). As a result of the validity and reliability calculations, it was concluded that the test measures early literacy skills in a valid and reliable way.

#### *Project-Based Education Program*

Before the project-based education program was prepared, the "Ministry of National Education Pre-School Education Program (2013) was used and the achievements and indicators to support children's early literacy skills were determined. Within the scope of the training program based on the project approach, three different projects were prepared: "Milk Project", "Coffee Project" and "Bird Project". Three separate training plans were created within the scope of each project.

The education program based on the project approach was prepared by the researchers considering the children's age group, interests, needs, and developmental processes in line with the determined achievements and indicators.

The stages of the project approach were taken into consideration while creating the learning processes in the education program based on the project approach, and in each determined project, the stages of starting-planning, implementing the project, finalizing the project and evaluating were included. Within the scope of the project-based education program, there are Turkish activities, art activities, game activities, movement activities, drama activities, music activities, science and math activities. The education program based on the project approach was applied to the children in the experimental group three days a week for eight weeks.

### Data Collection

Ethics committee approval for the research was issued by Afyon Kocatepe University Social and Human Sciences Scientific Research and Publication Ethics Committee, dated 11.01.2019 and numbered 13. The research was collected in the province of Afyonkarahisar in February-May in the 2018-2019 academic years. Before the project-based education program was implemented, the Test of Early Literacy (TEL) was administered to the children in the experimental and control groups as a pre-test by one of the researchers who had the practitioner certificate. TEL was held in a quiet room separate from the educational environments, sitting opposite each other on tables and chairs suitable for children, to attract the children's attention and ensure their motivation. After the pre-tests were applied, a project-based education program was applied to the children in the experimental group. The children in the control group continued their education for the Ministry of National Education Preschool Education Program (2013). After the project-based education program was applied to the children in the experimental group, TEL was applied to the children in the experimental and control groups as a post-test.

### Data Analysis

In the study, the data collected with the "General Information Form" and "Test of Early Literacy (TEL)" were evaluated with the SPSS program. Shapiro-Wilk test was applied on the pre-test and post-test measurements of the scales to determine whether the scores obtained from the data collection tools of the children in the experimental and control groups showed a normal distribution. As a result of the Shapiro Wilk Test applied to the pre-test and post-test scores of all scales and their sub-dimensions, results showing normal distribution and non-distribution were obtained. For this reason, the Mann Whitney U test was used for the values that did not have a normal distribution in the comparisons between two independent groups, and the t test for the dependent groups (paired samples test) was used for the values that had a normal distribution in the comparisons between the two spouses in the dependent groups.

### Results

The results of the Test of Early Literacy (TEL) pre-test-post-test scores, which were filled in by evaluating the individual early literacy levels of the children in the experimental and control groups, were given in the tables below:

Table 1. Dependent t-Test Results of the Pre-Test Scores of the Children in the Experimental and Control Groups Received from TEL

TEL	Group	Mean±Sd.	Min.- Max.	t	p
Receptive Language	Experimental	11.78-1.73	8.00-14.00	0.339	0.737
	Control	11.56-2.18	6.00-15.00		
Expressive Language	Experimental	9.17-2.50	3.00-13.00	-0.064	0.949
	Control	9.22-2.67	3.00-12.00		
Category Naming	Experimental	7.72-1.53	4.00-10.00	-0.095	0.925
	Control	7.78-1.96	4.00-10.00		
Function Knowledge	Experimental	7.44-1.42	5.00-10.00	0.000	1.000
	Control	7.44-2.01	3.00-10.00		
Phonological Awareness	Experimental	11.67-5.39	3.00-26.00	2.203	0.034
	Control	8.44-3.07	4.00-14.00		
Letter Knowledge	Experimental	4.22-2.39	2.00-6.00	1.186	0.244
	Control	3.44-1.42	1.00-6.00		

Listening Comprehension	Experimental	4.33-1.08	2.00-6.00	-0.419	0.678
	Control	4.50-1.29	2.00-6.00		
Total	Experimental	56.33-10.08	37.00-82.00	1.170	0.250
	Control	52.39-10.15	26.00-68.00		

When Table 1 was examined, according to the dependent t-Test results; TEL of the children in the experimental and control groups: “Receptive Language ( $t=0.339$ ,  $p<.05$ ), Expressive Language ( $t=-0.064$ ,  $p<.05$ ), Category Naming ( $t=-0.095$ ,  $p<.05$ ), Function Knowledge ( $t=0.000$ ,  $p<.05$ ), Letter Knowledge ( $t=1,186$ ,  $p<.05$ ), Listening Comprehension ( $t=-0.419$ ,  $p<.05$ )” sub-dimensions and total ( $t=1,170$ ,  $p<.05$ ) no statistically significant difference was found between their pre-test mean scores. It was seen that there was a statistically significant difference in favor of the experimental group in the sub-dimension of “Phonological Awareness ( $t= 2.203$ ,  $p<.05$ )”.

Table 2. Dependent t-Test Results of the Pre-Test Post-Test Scores Received from TEL by the Children in the Experimental Group

TEL	Group	Mean±Sd.	Min.- Max.	t	p
Receptive Language	Pre-test	11.78±1.73	8.00-14.00	-6.274	<0.001
	Post-test	14.22±0.81	13.00-15.00		
Expressive Language	Pre-test	9.17±2.50	3.00-13.00	-9.263	<0.001
	Post-test	13.61±1.33	10.00-15.00		
Category Naming	Pre-test	7.72±1.53	4.00-10.00	-3.551	0.002
	Post-test	9.00±1.28	6.00-10.00		
Function Knowledge	Pre-test	7.44±1.42	5.00-10.00	-3.927	0.001
	Post-test	8.83±1.04	7.00-10.00		
Phonological Awareness	Pre-test	11.67±5.39	3.00-26.00	-8.250	<0.001
	Post-test	21.06±3.08	14.00-25.00		
Letter Knowledge	Pre-test	4.22±2.39	2.00-6.00	-10.574	<0.001
	Post-test	9.94±2.10	5.00-13.00		
Listening Comprehension	Pre-test	4.33±1.08	2.00-6.00	-6.101	<0.001
	Post-test	5.83±0.38	5.00-6.00		
Total	Pre-test	56.33±10.08	37.00-82.00	-14.442	<0.001
	Post-test	82.50±6.39	67.00-91.00		

The results of the dependent t-test in Table 2 show that the post-test mean scores of the children in the experimental group were higher in Receptive Language ( $t=-6.274$ ,  $p <.05$ ), Expressive Language ( $t=-9.263$ ,  $p <.05$ ), Naming Categories ( $t=- 3.551$ ,  $p <.05$ ), Functional Information ( $t=-3.927$ ,  $p <.05$ ), Phonological Awareness ( $t=-8.250$ ,  $p <.05$ ), Letter Knowledge ( $t=-10.574$ ,  $p <.05$ ), Listening Comprehension ( $t=-6.101$ ,  $p <.05$ )” sub-dimensions and overall ( $t=-14.442$ ,  $p <.05$ ) of TEL were statistically significantly higher than the pre-test mean scores.

Table 3. Dependent t-Test Results of the Pre-Test Post-Test Scores of the Children in the Control Group Received from TEL

TEL	Test	Mean±Sd.	Min.- Max.	t	p
Receptive Language	Pre-test	11.56-2.18	6.00-15.00	-7.507	<0.001
	Post-test	13.61-1.33	10.00-15.00		
Expressive Language	Pre-test	9.22-2.67	3.00-12.00	-7.873	<0.001
	Post-test	11.50-2.38	6.00-15.00		
Category Naming	Pre-test	7.78-1.96	4.00-10.00	-3.289	0.004
	Post-test	8.56-1.46	5.00-10.00		
Function Knowledge	Pre-test	7.44-2.01	3.00-10.00	-3.986	0.001

Phonological Awareness	Post-test	8.56-1.54	5.00-10.00	-5.466	<0.001
	Pre-test	8.44-3.07	4.00-14.00		
Letter Knowledge	Post-test	12.28-3.64	5.00-19.00	-4.441	<0.001
	Pre-test	3.44-1.42	1.00-6.00		
Listening Comprehension	Post-test	5.06-1.70	1.00-7.00	-5.236	<0.001
	Pre-test	4.50-1.29	2.00-6.00		
Total	Post-test	5.61-0.61	4.00-6.00	-10.276	<0.001
	Pre-test	52.39-10.15	26.00-68.00		
Total	Post-test	65.17-7.89	47.00-77.00	-10.276	<0.001
	Pre-test	52.39-10.15	26.00-68.00		

When Table 3 was examined, according to the Dependent t-Test results; TEL's "Receptive Language ( $t=-7.507$ ,  $p<.05$ ), Expressive Language ( $t=-7.873$ ,  $p<.05$ ), Category Naming ( $t=-3.289$ ,  $p<.05$ ), Function Knowledge ( $t=-3.986$ ,  $p<.05$ ), Phonological Awareness ( $t=-5.466$ ,  $p<.05$ ), Letter Knowledge ( $t=-4.441$ ,  $p<.05$ ), Listening Comprehension ( $t=-5.236$ ,  $p<.05$ )" sub-dimensions and total ( $t=-10.276$ ,  $p<.05$ ) post-test mean scores were statistically significantly higher than pre-test mean scores.

Table 4. Mann Whitney U Test Results Regarding the Pre-Test Post-Test Scores Differences of Children in the Experimental and Control Groups from TEL

TEL	Group	Mean±Sd.	Min.- Max.	U	p
Receptive Language	Experimental	2.44-1.65	1.00-7.00	149.500	0.696
	Control	2.06-1.16	0.00-4.00		
Expressive Language	Experimental	4.44-2.04	1.00-8.00	64.000	0.001
	Control	2.28-1.23	0.00-4.00		
Category Naming	Experimental	1.28-1.53	-2.00-4.00	129.000	0.308
	Control	0.78-1.00	-1.00-2.00		
Function Knowledge	Experimental	1.39-1.50	-2.00-4.00	130.000	0.323
	Control	1.11-1.18	0.00-4.00		
Phonological Awareness	Experimental	9.39-4.83	-3.00-21.00	4.156*	<0.001
	Control	3.83-2.98	-1.00-9.00		
Letter Knowledge	Experimental	5.72-2.30	1.00-10.00	23.500	<0.001
	Control	1.61-1.54	-1.00-5.00		
Listening Comprehension	Experimental	1.50-1.04	0.00-3.00	126.000	0.265
	Control	1.11-0.90	0.00-3.00		
Total	Experimental	26.17-7.69	9.00-46.00	6.093*	<0.001
	Control	12.78-5.28	2.00-22.00		

Examining Table 4, according to the Mann Whitney U and independent t tests, the EROT scores of the children in the experimental and control groups were found to be significantly different in favor of the experimental group on the sub-dimensions of Expressive Language ( $U=64.0$ ,  $p<.05$ ), Phonological Awareness ( $t=4.156$ ,  $p<.05$ ), Letter Knowledge ( $U=23.50$ ,  $p<.05$ ), and Total Score ( $t=6.093$ ,  $p<.05$ ) pre-test and post-test.

## Discussion

Supporting early literacy skills is very important in the preschool period (Ergül et al., 2016), which is considered an important determinant of academic success at all education levels (Spira, Bracken & Fischel, 2005). In order to enable preschool children to develop positive attitudes towards reading and writing, teachers should create learning environments full of rich stimuli where children can interact with different literacy materials and organize activities with different content (Ozen Altinkaynak, 2019). Project-based practices that support children's ability to express what they learn, wonder and express their ideas enable them to experience early literacy skills and be motivated about literacy effectively. The project approach, which includes meaningful processes for children and

related to their daily lives, includes reading, writing, listening, speaking and researching different ideas. Therefore, the project approach could be used effectively to support literacy skills that are part of life. (Beneke, 2003).

In the study examining the effect of the project-based instruction program on children's early literacy skills, it was found that the mean scores of children in the experimental group were significantly higher than the pre-test mean scores on the subdimensions of receptive language, expressive language, category naming, functional knowledge, phonological awareness, letter knowledge, and listening comprehension, and overall on TEL post-test. In the project study organized within the framework of milk, coffee and bird themes that enable children to connect with their daily life experiences easily, natural opportunities were created where children can use language effectively and interact with their environment. In the project work, the children were guided to turn their experiences into stories while questioning them and dramatizing and dramatizing the stories. Concept maps created with the children in the initial stages of the projects were placed in an area accessible to the children, and the children added pictures and texts to the concept map throughout the project and followed the process. Children recorded what they learned through project diaries, and their vocabulary increased by learning the meaning of different words and terms during the practices. During the in-class activities and field trips carried out during the implementation phase of the projects, the children had the opportunity to ask the questions they had determined/listed beforehand to the relevant authorities and discuss and interpret what they learned. In addition, children expressed themselves during conversations and brainstorming in daily assessments.

In the literature, some studies concluded that early literacy programs prepared with different contents (Çetin, 2019; Yalman, 2020; Yumuş, 2018) and different book reading methods (Doğan, 2019; Efe & Temel, 2018; Ergül et al., 2016; Lever & Sénéchal, 2011; Yalavaç, 2020) improve children's early literacy skills. Xu, Chin, Reed, and Hutchinson (2014) examined the effects of an early literacy project applied to children from low-income families on children's school readiness skills. As a result of their work, children's verbal and expressive language skills, phonological and writing awareness, and alphabet knowledge have significantly increased, and families' awareness of literacy skills has increased. In some studies (Bayraktar & Temel, 2014; Çetin, 2019; Özen Altınkaynak & Akman, 2016; Parbucu & Dinç, 2017) it was emphasized that parents should cooperate with teachers in developing children's early literacy skills. It is important to get the support of families to achieve the goals set in the project work, ensure the necessary efficiency from the project, and reinforce what children have learned within the scope of the project (Helm & Katz, 2001). Within the scope of the current study, the families of the children in the experimental group were informed about all the stages of the project work by using different family communication activities such as news letters and audio/visual recordings. Families supported the project work on issues such as providing the necessary materials, helping the teacher in field trips and activities in the classroom, carrying out the suggested family participation activities at home with their children, and participating in the exhibitions held at the end of the project. Studies emphasize that the arrangements made in learning environments contribute to children's early literacy skills (Gök, 2013; Xu et al., 2014). During the project work, children in the learning centers interacted with literacy materials as magazines, books, albums, tickets, etc., which are related to the theme and had the opportunity to examine books, magazines and visuals with different content related to the project themes during the activities. All these situations support the early literacy skills of the children who take part in the projects based on the project approach.

In this study, it was found that receptive language, expressive language, general naming, functional knowledge, phonological awareness, letter knowledge, listening comprehension, and overall post-test mean scores were significantly higher in control group children than pre-test mean scores. This observed change in the early literacy skills of the children in the control group who had not participated in the project studies could be explained by the fact that the children continued their developmental processes and the activities that had been prepared in accordance with the performances and indicators of early literacy skills in the MEB Preschool Education Program (2013) were applied to the control group. Similar to this result, Yalman (2020) obtained the result that the early literacy skills of the children in the control group who did not receive education also improved in the study in a quasi-experimental design, in which he examined the effect of the education given in the library on the early literacy skills of children. Some studies concluded that preschool education positively affects children's language, cognitive, social development and academic skills (Koçak, Ergin & Yalçın, 2014).

The current study determined that expressive language, phonological awareness, letter knowledge sub-dimensions of EROT and total post-test mean scores of the children in the experimental group were significantly higher than the children in the control group. According to this result, it could be said that the education program based on the project approach improves the early literacy skills of children better. In addition, it could be explained that the activities carried out within the scope of the projects cover the criteria for developing early literacy skills. Cetin (2019) and Munoz, Valenzuela, and Orellana (2018) determined that, in parallel with the findings obtained from this study, the early literacy skills of the children in both the control and experimental groups improved, but the



skills of the children in the experimental group for which the program was applied increased more. In the literature, some studies concluded that the applications based on the project approach affect the language and cognitive skills of children positively (Aral et al., 2010; Çağlar Kabacık & Deretarla Gül, 2016; Kefi, 2017; Yıldız Bicakci and Gursoy, 2010). In the study conducted by Sayuti et al. (2020), it was concluded that project-based practices improve children's speaking skills. Similarly, Jaya, Hermansyah and Rosmiyati (2019) stated that project-based practices effectively develop children's self-efficacy in using language and speaking skills. Considering the results showing that the foundations for lifelong early literacy skills are laid in the preschool period (Krajewski & Schneider, 2009) and that children's skills in longitudinal studies influence their processes in the first grade of elementary school (Ergül et al., 2017; Güldenoğlu, Kargın ve Ergül, 2016), it could be considered an important development that the program based on the project approach developed in this study is effective. Moreover, it is considered that the application of an alternative approach in early childhood that supports children's early literacy skills as a whole provides a different perspective from the literature.

## Conclusion and Recommendations

As a result of this study, it was found that there was no statistically significant difference between the pre-test mean scores of the children in the experimental and control groups from the total of TEL and its sub-dimensions, except for the sub-dimensions of phonological awareness. This result shows that the early literacy skills of the experimental and control groups were at a similar level at the beginning of the study. As a result of the comparisons between the pre-test and post-test mean scores obtained from the total of TEL and its subdimensions, it was found to be significantly different in favor of the experimental group on the sub-dimensions of expressive language, phonological awareness, letter knowledge and total score.

In line with the results obtained from the study, the following recommendations could be made:

- More comprehensive activities to develop children's early literacy skills should be implemented in pre-school classes, and necessary arrangements should be made by including different literacy materials in learning environments.
- In-service training should be organized so that preschool teachers could have the necessary knowledge and skills to develop early literacy skills through project-based practices.
- Educational programs based on different approaches to improve the early literacy skills of preschool children should be prepared and experimental studies should be planned on the effectiveness of these programs.

## Acknowledgments or Notes

This research is from the project (No 18.KARİYER.90) entitled "Proje Yaklaşımına Dayalı Eğitimin Çocukların Erken Okuryazarlık Becerilerine ve Gelişim Alanlarına Etkisi" (The Effects of Project Based Approach on Children's Early Literacy Skills and Developmental Areas) and granted by Scientific Research Projects Council of Afyon Kocatepe University (Afyon Kocatepe Üniversitesi Bilimsel Araştırma Koordinasyonları Birimi)

## Author (s) Contribution Rate

1. Author: 50%, 2. Author: 30%, 3. Author: 20%

## Conflicts of Interest

The authors declared no potential conflicts of interest regarding the research, authorship or publication on this article.

## Ethical Approval

Ethical permission 11/01/2019-13 was obtained from Afyon Kocatepe University Social and Human Sciences Scientific Research and Publication Ethics Committee, for this research.

## References

- Altun, D., & Sarı, B. (2018). A decade of early literacy research trends in turkey: A thematic review. *Journal of Education and Future*, 13, 23-32.
- Aral, N., Kandır, A., Bütün Ayhan, A., & Can Yaşar, M. (2010). The influence of project based curricula on six-year old preschoolers conceptual development. *Social Behaviour and Personality*, 38(8), 1073-1080.
- Arıkan, A. (2020). Dezavantajlılık bağlamında proje yaklaşımı: Öğretmenler, çocuklar ve ailelerin deneyimleri. *Journal of Early Childhood Studies*, 4(1), 106-134. <https://doi.org/10.24130/ecccd-jecs.1967202041215>
- Arıkan, A., & Kimzan, İ. (2016). Okul öncesi eğitimde proje yaklaşımı: Ağaç bilimcilerin araştırmaları aprojisi. *İlköğretim Online*, 15(2), 498-528.
- Barratt Pugh, C. (2000). The socio-cultural context of literacy learning. In Caroline Barratt-Pugh and Mary Rohl (Eds.), *Literacy learning in the early years* (pp. 2-5). Buckingham: Open University.
- Bayraktar, V., & Temel, F. (2014). Okuma yazmaya hazırlık eğitim programının çocukların okuma yazma becerilerine etkisi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 29(3), 8-22.
- Beneke, S. (2003). *Project approach catalog 4: literacy and project work by the project approach study group. strategies to incorporate literacy in project work in the pre- kindergarten classroom*. Edit. J. H. Helm (Ed.) Early Childhood and Parenting Collaborative, Urbana: University of Illinois.
- Bredenkamp, S. (2015). Çocuklara iletişimi öğretme: dil, okuryazarlık ve sanat. İçinde H. Z. İnan ve T. İnan (Ed.), *Erken çocukluk eğitiminde etkili uygulamalar* (s.374-409). Ankara: Nobel.
- Broemmel, A. D., Moran, M. J., & Wooten, D. A. (2015). The impact of animated books on the vocabulary and language development of preschool aged children in two school settings. *Early Childhood Research & Practice*, 17(1). Retrived from <http://ecrp.uiuc.edu/v17n1/broemmel.html>
- Büyüköztürk, Ş., Çakmak Kılıç, E., Akgün, Ö.E., Karadeniz, Ş. ve Demirel, F.(2010). *Bilimsel araştırma yöntemleri* (5. Baskı).Ankara: Pegem Akademi Yayınları.
- Clay, M. M. (2000). *An observation survey of early literacy achievement*. Portsmouth, NH: Heinemann.
- Çağlar Kabacık, S., & Deretarla Gül, E. (2016). Anasınıfına devam eden çocukların sebzelere ilişkin tepkilerinin incelenmesi: proje yaklaşımı örneği. *Kastamonu Eğitim Dergisi*, 24(5), 2323-2334. Retrieved from <https://dergipark.org.tr/tr/pub/kefdergi/issue/27735/317850>
- Çetin, A. (2019). *Erken okuryazarlık becerileri eğitim programının erken okuryazarlık ve erken matematik becerileri üzerine etkisinin incelenmesi*. Doktora tezi, Hacettepe Üniversitesi, Ankara.
- Dickinson, D. K., & Neuman, S. B. (2018). *Handbook of Early Literacy Research* (G.Akoğlu & C. Ergül, Çev.). Ankara: Nobel.
- Doğan, A. (2019). *Diyalojik okumanın beş-altı yaş çocukların erken okuryazarlık becerilerine etkisinin incelenmesi*. Yüksek lisans tezi, İnönü Üniversitesi, Malatya.
- Efe, M., & Temel, F. (2018). The study of the effect of the interactive book reading program on 48-66 months-old preschool children's writing awareness. *Journal of Early Childhood Studies*, 2(2), 257-283.
- Elliott, E., & Olliff, C. (2008). Developmentally appropriate emergent literacy activities for young children: Adapting the Early Literacy and Learning Model (ELLM). *Early Childhood Education Journal*, 35(6), 551-556.
- Enerem, D. (2018). *60-72 ay arası çocuklarda erken okuryazarlık becerilerinin çeşitli değişkenler açısından incelenmesi* (Yayımlanmamış yüksek lisans tezi). Maltepe Üniversitesi, İstanbul.
- Ergül, C., Akoğlu, G., Sarıca, A. D., Karaman, G., Tufan, M., Bahap-Kudret, Z., & Deniz, Z. (2016). An adapted dialogic reading program for Turkish kindergarteners from low socio-economic backgrounds. *Journal of Education and Training Studies*, 4(7), 169-184. <http://dx.doi.org/10.11114/jets.v4i7.1565>
- Ergül, C., Dolunay Sarıca, A., Akoğlu, G., & Karaman, G. (2017). The home literacy environments of Turkish kindergarteners: Does SES make a difference? *International Journal of Instruction*, 10 (1), 1308-1470.
- Gök, N. F. (2013). *Anaokullarında erken okuryazarlık çevresinin değerlendirilmesi ve sınıf ortamının çocukların erken okuryazarlık davranışlarına etkisi* (Yayımlanmamış doktora tezi). Gazi Üniversitesi, Ankara.
- Girgin, Ü. (2003). Okumaya hazırlık etkinlikleri. *Çocukta dil ve kavram gelişimi*. S. Topbaş (Ed.). (Üçüncü Baskı). Eskişehir: Anadolu Üniversitesi.
- Gizir Ergen, Z. (2013). *Proje yaklaşımının anasınıfına devam eden çocukların yaratıcılıklarına etkisinin incelenmesi* (Yayımlanmamış Doktora Tezi). Ankara Üniversitesi, Ankara.
- Griffith, P. L., Beach, S. A., Ruan, J. & Dunn, L. (2008). *Literacy for young children: A guide for early childhood educators*. Thousands Oaks, CA: Corwin Press.
- Güldenöğlü, B., Kargin, T., & Ergül (2016). Sesbilgisel farkındalık becerilerinin okuduğunu anlama üzerindeki etkisi: Boylamsal bir çalışma. *İlköğretim Online*, 15(1), 251-272.
- Helm, J. H. (2004). Projects that power young minds. *Educational Leadership*, 62(1), 58-62.
- Helm, J. H., & Katz, G. L. (2001). *Young investigators: The Project approach in the early years*. Newyork and London: Teacher Collage Press.

- Hoover, W.A. (2002). The importance of phonemic awareness in learning to read. SEDL Letter. XIV (3). Retrieved from: <http://www.sedl.org/pubs/sedlletter/v14n03/3.html>
- Jaya, A., Hermansyah, H., & Rosmiyati, E. (2019). The implementation of project-based learning in increasing speaking achievement and self-confidence. *Indonesian Educational Administration and Leadership Journal*, 1, 4-14.
- Justice, L., & Ezell, H. (2004). Print referencing: an emergent literacy enhancement strategy and its clinical applications. *Language, Speech, and Hearing Services in School*, 35, 185-193.
- Kammermeyer, G., Stuck, A., & Roux, S. (2016). Promotion of literacy and numeracy in pyramid classrooms in Germany. *Early Child Development and Care*, 186(1), 153-172. <http://dx.doi.org/10.1080/03004430.2015.1052424>
- Karaman, G. (2014). Erken okuryazarlık becerilerinin tarihsel gelişimi, kuramsal temelleri ve kapsamı, Ed. Fulya Temel, *Her yönüyle okul öncesi eğitim dil ve erken okuryazarlık* (s 12-31) Ankara: Hedef Yayınları.
- Kargın, T., Güldenoğlu, B., & Ergül, C. (2017). Anasınıfı çocuklarının erken okuryazarlık beceri profili: Ankara örnekleme [Early Literacy Profile of Kindergarten Children: Ankara Sample]. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Özel Eğitim Dergisi [Ankara University Faculty of Educational Sciences Journal of Special Education]*, 18(01), 61-87.
- Katz, L. G. (1998). The project approach. *Scholastic Early Childhood Today*, 12(6), 43-44.
- Katz G. L., & Chard, S. C. (2000). *Engaging children's minds: The project approach* (Second Edition) Connecticut: Ablex Publishing Corporation Stamford.
- Kaynak Ekici, K. B. (2017). *MEB okul öncesi eğitim programına uyarlanmış piramit metodunun 5 yaş çocuklarının dil ve erken okuryazarlık becerilerine etkisinin incelenmesi*. Doktora tezi, Gazi Üniversitesi, Ankara.
- Kefi, S. (2017). Okul öncesi eğitimde proje yaklaşımı uygulamalarının temel bilimsel süreç becerilerini kapsama durumunun incelenmesi. *Journal of Early Childhood Studies*, 1(1), 3-18. DOI: 10.24130/eccdjecs.19672017119
- Koçak, N., Ergin, B., & Yalçın, H. (2014). 60-72 aylık çocukların türkçe dil kullanımı düzeyleri ve etki eden faktörlerin incelenmesi. *Karamanoğlu Mehmetbey Üniversitesi Sosyal ve Ekonomik Araştırmalar Dergisi*, 4, 100-106 . DOI: 10.18493/kmusekad.95564
- Krajewski, K., Schneider, W. (2009). Exploring the impact of phonological awareness, visual-spatial working memory, and preschool quantity-number competencies on mathematics achievement in elementary school: Findings from a 3-year longitudinal study. *J Exp Child Psychol.*, 103(4), 516-531.
- Kumar Roul, S. (2014). Language development of the preschool children: The effects of an audio-visual intervention program in Delhi. *International Journal of Instruction*. 7(1), 59-74.
- Lever, R., & Sénéchal, M. (2011). Discussing stories: On how a dialog reading intervention improves kindergarteners' oral narrative construction. *Journal of Experimental Child Psychology*, 108, 1-24.
- Ministry of National Education Pre-School Education Program (2013). *Okul öncesi eğitim programı*. Ankara: MEB Yayıncılık.
- Metin, Ş., & Aral, N. (2014). Proje yaklaşımına dayalı eğitimin beş yaş (60-72 ay) çocuklarının çizim becerilerine etkisinin incelenmesi. *Eğitim ve Öğretim Araştırmaları Dergisi*, 3(4), 180-194.
- McNaughton, S. (1995). *Patterns of emergent literacy: Processes of development and transition*. New York: Oxford University Press.
- Munoz, K., Valenzuela, M., Orellana, P. (2018). Phonological awareness instruction: A program training design for low-income children. *Int J Educ Res.*, 89, 47-58.
- Neuman, S. B., & Dickinson, D. K. (Eds.). (2001). *Handbook of early literacy research*. New York: Guilford Publications.
- Oğuz, V. (2012). *Proje yaklaşımının anasınıfına devam eden çocukların problem çözme becerilerine etkisinin incelenmesi*. Doktora Tezi, Ankara Üniversitesi, Ankara.
- Oktay, A., & Unutkan, Ö. (2003). İlköğretime hazır oluş ve okul öncesi eğitimle ilköğretimin karşılaştırılması. *Gelişim ve eğitimde yeni yaklaşımlar*. (Birinci Baskı). (s.145-155). İstanbul: Morpa Yayınları.
- Özdemir Bayraktar, Z., & Bayraktar, A. (2015). Investigation of pre-service teachers' awareness regarding children's early literacy. *Journal of Education and Future*, 7, 37-48. Retrieved from <https://dergipark.org.tr/tr/pub/jef/issue/18639/196737>
- Özen Altınkaynak, Ş. (2019). Okul öncesi dönemde erken okuryazarlık becerilerinin gelişimi. *Dumlupınar Üniversitesi Eğitim Bilimleri Enstitüsü Dergisi*, 3(1), 37-49.
- Özen Altınkaynak, Ş., & Akman, B. (2016). Aile temelli okuma yazmaya hazırlık programının çocukların okuma yazmaya hazırlık becerilerine etkisi. *Eğitim ve Bilim*, 41(186), 185-204.
- Parpucu, N., & Dinç, B. (2017). Seslerin Renkli Dünyası programının okul öncesi çocukların fonolojik farkındalık becerileri üzerindeki etkisi. *Eğitim ve Bilim*, 42(192), 233-261.
- Pence, K. L. (2006). *Assessment in emergent literacy*. United Kingdom: Plural Publishing.

- Ranweiler, L.W. (2004). *Preschool readers and writers early literacy strategies for teachers*. Ypsilanti, MI: High/Scope Press.
- Rathvon, N. (2004). *Early reading assessment a practitioner's handbook*. London: The Guilford Press A Division of Guilford Publications.
- Reese, E., Cox, A., Harte, D., & McAnally, H. (2003). Diversity in adults' styles of reading books to children. In A. Van Kleeck, S. A. Stahl, & E. B. Bauer (Eds.), *On reading books to children: Parents and teachers* (pp.37-57). Mahwah, NJ: Erlbaum.
- Rhyner, M., Haebig, E. K., & West, K. M. (2009). Understanding frameworks for the emergent literacy stage. In P. M. Rhyner (Ed.) *Emergent literacy and language development promoting learning in early childhood*, (pp 5-36). London: Guilford press.
- Sayuti, H. A. M., Ann, T. G., Saimi, W. M. S. A., Bakar, M. A. B., Dawawi, S. N. A., & Mohamad, M. (2020). Using gold standard project based learning for intermediate year three pupils to enhance english speaking skill: A conceptual paper. *Creative education*, 11, 1873-1889. <https://doi.org/10.4236/ce.2020.1110137>
- Schnobrich, K. M. (2009). *The relationship between literacy readiness and auditory and visual perception in kindergarteners*. Unpublished Master Thesis, Miami University, Oxford.
- Spira, E. G., Bracken, S. S., & Fischel, E. J. (2005). Predicting improvement after first-grade reading difficulties: The effects of oral language, emergent literacy, and behaviour skills. *Developmental Psychology*, 41(1), 225-234.
- Strommen, L. T., & Mates, B. F. (2000). What readers do: Young children's ideas about the nature of reading. In M. Robinson, J. McKenna, & J. Wedman (Eds.) *Issues and trends in literacy education* (2nd ed., (pp.200–212). Boston: Allyn & Bacon.
- Tahta, F., & İvrendi, A. (2007). *Okul öncesi eğitimde fen öğretimi ve öğrenimi*. Ankara: Kök Yayıncılık.
- Tanju Aslışen, E. H., & Hakkoymaz, S. (2020). Erken okuryazarlık alanında gerçekleştirilmiş lisansüstü tez çalışmalarının incelenmesi: Bir içerik analizi. *Ana Dili Eğitimi Dergisi*, 8(4), 1483-1498.
- Taşer, S. (2012). *Konuşma eğitimi*. İstanbul: Pegasus Yayınevi.
- Temel, F., Kandır, A., Erdemir, N., & Çiftçi, H. (2005). *Okul öncesi eğitimde proje yaklaşımı ve program örnekleri*. İstanbul: Morpa Kültür Yayınları.
- Turan, F., & Akoğlu, G. (2011). Okul öncesi dönemde sesbilgisel farkındalık eğitimi [Phonological awareness training in pre-school period]. *Eğitim ve Bilim [Education and Science]*, 36(161), 64-75.
- Uyanık, Ö., & Alisinanoğlu, F. (2016). Akademik ve dil becerileri eğitim programının 61-66 aylık çocukların bilişsel yetenekleri ile erken akademik ve dil becerilerine etkisi. *Mediterranean Journal of Humanities*, 6(2), 459-481. <http://dx.doi.org/10.13114/MJH.2016.310>.
- Van Kleeck, A. (1998). Preliteracy domains and stages: Laying the foundations for beginning reading. *Journal of Children's Communication Development*, 20, 33-51.
- Wasik, B. H., & Hendrickson, J. S. (2004). Family literacy practices. In C. A. Stone, E. R. Silliman, B. J. Ehren, & K. Apel (Eds.), *Handbook of language and literacy: Development and disorders* (pp. 154-174). New York: Guilford Press.
- Whitehurst, G. J., & Lonigan, C. J. (1998). Child development and emergent literacy. *Child Development*, 69 (3), 848-872.
- Xu, Y., Chin, C., E Reed, E., & Hutchinson, C. (2014). The effects of a comprehensive early literacy project on preschoolers' language and literacy skills. *Early Childhood Education Journal*, 4, 295-304. DOI 10.1007/s10643-013-0613-6
- Yalavaç, N. (2020). *Etkileşimli kitap okumanın erken okuryazarlık becerilerine etkisi*. Yüksek lisans tezi, İnönü Üniversitesi, Malatya.
- Yalman, F. (2020). *Kütüphanede verilen 'Kitapların Eğlenceli Dünyası' eğitim programının çocukların erken okuryazarlık becerilerine etkisinin incelenmesi*. Yüksek lisans tezi, Karabük Üniversitesi, Karabük.
- Yıldız Bıçakçı, M. (2009). *Proje yaklaşımına dayalı eğitimin altı yaş çocuklarının gelişim alanlarına etkisinin incelenmesi*. Doktora tezi, Ankara Üniversitesi, Ankara.
- Yıldız Bıçakçı, M., & Gürsoy, F. (2010). Proje yaklaşımına dayalı eğitimin altı yaş çocuklarının gelişimine etkisinin incelenmesi. *Kastamonu Eğitim Dergisi*, 18(1), 307-316.
- Yumuş, M. (2018). *Paylaşımlı kitap okuma müdahale programının ebeveynlerin deneyimlerine bebeklerin dil gelişimine ve erken okuryazarlık becerilerine etkisi*. Yayınlanmamış Doktora Tezi, Hacettepe Üniversitesi, Ankara.