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Examining The Effect of The Storyline Method of Education on The Level of Elementary School Preparedness of Five Year-Old Children

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Abstract

This study examined the effect of the storyline method of education on the level of elementary school preparedness of five year-old children. The study was of experimental research design and used the pretest/posttest with control group experimental model. The universe of the study constituted 5 year-old children attending a pre-school program in the district of Edremit, Balıkesir during the 2015-2016 academic year. The study sample comprised 23 experimental, 23 control group children, a total of 46 children, who were afternoon attendees of the Sarıkız Preschool located in the district of Edremit in Balıkesir, Turkey. The Marmara Elementary School Preparedness Scale was used to collect data for the research and the data analysis was performed with the non-parametric Wilcoxon Signed Rank Test. The research entailed conducting activities with the experimental group every day for 7 weeks during the hours of 3 p.m. - 5:30 p.m., according to an activity plan based on the storyline method. The research results revealed a significant difference in the five year-olds who were taught with the Storyline method in terms of their Mathematical skills, Science Skills, Mental and Language Development, Socio-emotional Development and Self-care Skills. The storyline method is not an approach that is widely used in Turkey and because of this, there is only a scant number of studies that have been conducted on this technique. Since this study entails a comprehensive examination of the effects of the storyline method of children's education, it is believed that it will make a significant contribution to the literature. At the same time, the study includes a recommendation that the method of storyline education should be improved in the light of its findings and be more widely employed in the school system.

Keywords: Storyline method, elementary school preparedness, constructivist approach, pre-school education, mathematical skills, science skills, mental and language development.

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Introduction

The ages 0-6 are a time in which brain development has been largely concluded and during which extensive contributions are made to development and growth in all domains. The skills learned in this period prepare the child for the future. In Turkey, the age of 6 is accepted as the age to start school. Kutluca, Canbulat and Tuncel (2012) have stated that the readiness of a child in all domains of development does not necessarily mean that the child is ready for elementary school; a child must actually be ready to learn. In terms of acquiring the skills that prepare the child to learn, the child should be a level where speaking skills and the ability to use language have developed, no audial problems are present and there is adequate visual perception, the child's muscle coordination is at the desired level, and motor skills, number awareness, the ability to follow directions and the willingness to participate in group activities are present. According to Oktay and PolatUnutkan (2003), the meaningfulness of pre-school education is not in teaching children how to read and write but to provide children with a period in which they can reach a sufficient level of maturity that will enable them to hone their skills in becoming prepared for learning to read and write and to continue on into their elementary school years. Moreover, the Pre-school Education Program (2013) published by the Ministry of National Education does not include the teaching of reading and writing in its pre-school syllabus. Demonstrations of the alphabet or attempts to write down the letters are also not a part of the program. A pre-school education program aims at facilitating the transition into elementary school and increasing children's preparedness in this process.

Many approaches have been introduced recently to ensure change and development during a child's journey through school. While previously, these approaches placed the teacher at the forefront of teaching, with changing and developing technologies and investigations into human science, approaches that put emphasis on the student have started to take hold. The most commonly employed of these latter approaches is the constructivist educational approach. Thanks to constructivist education, students are at the vanguard of education and it is not the knowledge provided by the teacher but what the student learns through his/her own efforts that characterizes this approach to education. Studies report that the constructivist approach to education has a positive impact on ensuring the preparedness of pre-school children for elementary school.

Many new techniques have been developed in the world in the context of constructivism. Montessori education, Waldorf education, the Reggio Emilia approach are some of the methods that are the most widely recognized and used in pre-school education in Turkey. On the other hand, towards the end of the 1980's, a new method based on constructivism was introduced in Scotland. This was called the storyline educational method and was first investigated in Turkey by Güney (2003) and later adapted into the Turkish language by Güney (2003) as "Story-based learning." Yiğit (2007) and Tepetaş (2011) called this approach the "Storyline Approach." This study has used the term "Storyline Method."

Yiğit (2007) asserts that the most basic characteristic of the storyline method that differentiates it from other methods is that children are urged to use their own knowledge and develop new hypotheses by means of key questions, adding new knowledge to their prior knowledge through the method of trial and error. According to Bell (2007), a good story constitutes a plot, characters, and an event that starts off the story, which continues to a climax and lastly to a point where the story is resolved. At the beginning, a plot is created together with the children by stimulating the children's creativity through key questions. Then the characters in the story are created and described.The key questions are used to expand the plot and the children suggest new developments that may be experienced in the story. Finally, a celebration or an exhibit of the work done is carried out to finish off the story. After the end of the story, the children are asked what they learned in this activity and how the story could have been further developed as they are led into a review of their work. Barrett (2010) has said that the storyline method considers the whole of these activities. Children's creativity, as well as their decision-making skills are developed through the use of the storyline method. The method helps the child to fill up mental gaps between what the child knows and does not know, thus leading to new learning. Moreover, the storyline method provides children with the opportunity to make connections between the past and the future. It has been found that educators trained in the storyline method are more

creative in setting up their classroom plans. The storyline method considers the syllabus as a whole and places the responsibility of learning on the students themselves. That this method is abundantly used in Scotland, the United States and in Europe readily points to the positive aspects of the approach. Providing the means for developing creativity, the approach will help in building a bridge between outdated educational programs and allowing creative skills to develop and grow as part of an unknown future curriculum.

Bell and Harkness (2006) assert that the storyline method offers teachers a structured and conscious path to use in teaching their students knowledge, skills and behavior. Additionally, because the storyline method is open to both individual and group work, it has the potential of incorporating many other methods and techniques. Teachers employing the storyline method need to develop new strategies for activities. Using different techniques and strategies in this process will give students the opportunity to live through different learning experiences. Because the storyline method comprises a series of events, children are able to progress in the story by providing their own answers. The flexibility of the method at the same time gives teachers the chance to be comfortable in their guidance. Since both the teachers and the students are parts of the same process in the storyline method, they share new experiences and wisdom. On the other hand, in the storyline method, the teacher not only needs to know what to teach but how to teach it. The teacher must motivate the student in the process and help children adopt and accept the products of their work. In the storyline method, the teacher is a trainer, a facilitator, and an educational designer (Bell and Harkness, 2006).The storyline method challenges the role of traditional teacher, bringing forth the characteristics of a role that manages the course of events, provides information as needed, and plans the learning theme (Bell, 2007). The teacher and the students construct the storyline collaboratively and the students are autonomous in their learning (Bell and Harkness, 2006).

There are many studies in the international literature about the storyline method. One of these studies was conducted by Creswell (1997). Cresswell (1997) defends the view that the storyline method provides the students with the means to accomplish learning willingly. At the same time, it is striking that the storyline method gives the student the chance to own the story and the progressing events as well. In the first phase of the storyline method, the prior knowledge of the students is brought out as additions are made to what they know and the process slowly begins to unravel. The students are encouraged to use their imaginations to fill in the gaps. Later on, the students discover themselves what it is they do not know and prepare questions to facilitate the answering of these questions by setting out various hypotheses. This cycle ensures that the students learn first-hand what they need to know.

In the research conducted by Barrett-Rhonda (2010), the correlation between the storyline method and student motivation and students' thoughts and experiences about the storyline method were examined and it was observed that the storyline method made a positive impact on student motivation, thoughts and experiences. Because of these positive results, the importance of introducing the storyline method into the elementary school syllabus has been emphasized.

The study by Ahlqhist (2012) on the impact of the storyline method on a class of young students: In a case study conducted in Sweden, the storyline method was used during English class. The findings of the study determined that the storyline method had a positive impact on learning English and also resulted in cooperation between students. It was also observed that through the storyline method, the teaching of new grammar structures was facilitated and listening skills were enhanced.

There have been very few studies conducted in Turkey on storyline methodology. Only two pieces of research, in fact, appear in the literature on the use of the storyline method in the preschool period. The first of these was conducted by Tepetaş (2011). In this study, Tepetaş (2011) examined the impact of the storyline method on the development of basic conceptual knowledge levels in 6 year-olds in the province of Kırşehir. A total of 39 children attending preschool-19 in the experimental group and 20 in the control group-participated in the study. An eight-week storyline syllabus was implemented in the study. Study data were collected with a reviewed version of the "Bracken Basic Concepts Scale." At the end of the study, it was found that the children in the experimental group scored higher in achievement than their control group counterparts in terms of the subscales of color, letters, numbers,

dimensions, comparisons, form, academic maturity, individual social awareness and structural materials as well as in terms of their overall scale scores.

A study conducted by Eren (2015) in the city of Ankara explored whether or not there was any difference in the level of learning respect for differences among children who were taught using the storyline method and those who did not benefit from this experience. The "Respect for Differences Scale" was employed in the data collection. It was observed as an outcome of the study that children in the experimental group exhibited a significant increase in their respect for differences score and that this was due to the positive effect of the schooling they received using the storyline method.

One of the fundamental goals of preschool is to prepare pupils for elementary school. Various approaches are implemented in Turkey in order to enhance the level of preparedness of preschool children for elementary school. Such approaches are child-centered but have been designed according to the constructivist education model. The storyline method approach was also designed for constructivist education but relies on having children learn through their own experiences. The Turkish literature however is very limited in terms of research and resources related to the Storyline approach. The present study sought to determine the degree to which the level of preparedness for elementary school would be affected by the Storyline approach, a new method of education that has gained acceptance around the world. Because the scale used examines all the areas of growth affecting preschool children, it will provide a clear picture of the degree of difference the Storyline approach achieves and in which areas this difference is observed. In addition, a review of all domestic and international literature has revealed no study in which the storyline method has been investigated simultaneously with elementary school preparedness. For this reason, we believe that the study will make a significant contribution to the literature in this context.

We have observed that are are many articles in both the national and international field literature about elementary school preparedness. When we looked at studies related to the storyline method however, it was seen that the Turkish literature contains few studies on the storyline approach while there are many different pieces of research on the subject in the international literature. The present study sought to determine the degree to which the level of preparedness for elementary school would be affected by the Storyline approach, a new method of education that has gained acceptance around the world. Toward this aim, answers to the following questions were sought:

1. Is there a significant difference in terms of mental/language development in 5 year-old children receiving education using the storyline method?

2. Is there a significant difference in terms of social-emotional development in 5 year-old children receiving education using the storyline method?

3. Is there a significant difference in terms of self-care skills in 5 year-old children receiving education using the storyline method?

4. Is there a significant difference in terms of mathematical skills in 5 year-old children receiving education using the storyline method?

5. Is there a significant difference in terms of science skills in 5 year-old children receiving education using the storyline method?

Method

Research Model

This research aimed to explore whether or not the storyline method had an impact on the elementary school preparedness of 5 year-old children. In line with this aim, the study was of experimental research design. Büyüköztürk, Çakmak Kılınç, Akgün, Karadeniz and Demirel (2008) report that the most accurate results in scientific research are achieved through experimental studies. This is because this type of study offers the researcher the opportunity to compare data and carry out different procedures, ultimately examining the impact of the research and arriving at definitive interpretations of the study outcome.

Universe and Sample

The universe of the study constituted 5 year-old children who were attending a preschool program in the district of Edremit, Balıkesir during the 2015-2016 academic year. The study sample comprised 23 experimental, 23 control group children, a total of 46 children, who were afternoon attendees of the Sarıkız Preschool located in the district of Edremit in Balıkesir, Turkey.

Study Group

The study group comprised a total of 46 five year-old children--23 in the experimental group and 23 in the control group--who were enrolled in the Balıkesir Province, Edremit District Sarıkız Preschool during the 2015-2016 academic year. The principal reason the researcher chose to work with this group was to test the impact of an educational program built on the storyline method and to eliminate the effects of implicit variables.

In recruiting the study group, the individual portfolios and personal files of the 5 year-old children at Sarıkız Preschool were first reviewed. At the end of the review, it was seen that the children came from quite similar sociocultural backgrounds. The experimental and control groups were selected by the group sampling method. Additionally, whether or not the children had ever experienced the storyline method was queried and it was found that none of the children in the experimental and control groups had been introduced to this method.

Data Collection Instruments

The Personal Information Form developed by the researcher for the purpose of collecting study data was used to obtain information about the families of the children. The Marmara Elementary School Preparedness scale was used to obtain pretest-posttest data.

Personal Information Form

This form, prepared by the researcher to obtain information about the families of the children in the study, was made up of 10 questions. The form served to collect information about the gender, school attendance time, civil status, mother's educational status, father's educational status, number of children, order of birth, family's income level of the children in the experimental and control groups. The personal information form gathered together the demographics of all of the children involved in the study.

Marmara Elementary School Preparedness Scale

Developed by researcher Özgül Polat, the Marmara Elementary School Preparedness Scale was used for the purpose of collecting data for the study. This scale is made up of an implementation form and a progress form. The implementation form has 47 mathematical skills questions, 8 sound exercises questions, 14 science skills questions, 3 drawing questions and 2 labyrinth questions. The progress form contains 74 questions related to mental and language development, 40 questions on socio-emotional development, 23 questions related to physical development and 16 to self-care skills. The implementation form is administered to the children themselves, while the progress form is filled out by classroom teachers. The implementation form contains a total of 72 questions; the progress form a total of 153. All together, there are 225 questions. Made up of a total of 225 questions, this scale was administered to the 46 students first as a pretest and then again as a posttest. The data obtained were statistically analyzed.

The Marmara Preparedness for Elementary School Scale provides the needed developmental and applied information on the child. Although the scale allows for assessing preparedness in every domain, its principal task is to make a total evaluation of the results of all of the domains. Thus, it is possible to follow an integrated approach and draw up both a detailed and a general profile of the child (Unutkan, 2003, pp. 237-240).

Limitations

The study's limitations are described below.

1. The study is limited to the 5 year-olds enrolled at Sarıkız Preschool in the Edremit district of the province of Balıkesir during the 2015-2016 academic year, to the data collected in the 2015-2016 academic year, to the observations collected by the implementer during the data collection process and to the administration of the Marmara Elementary School Preparedness Scale (mathematical skills, science skills, mental and language development, socio-emotional development, self-care skills).

2. The study is limited by its use of a 7-week elementary school preparatory education facilitated by the storyline method.

Experimental Period

The study started in the second semester of the 2015-2016 academic year. Prior plans for the study and an application for the necessary permission was sent to the Çanakkale 18 Mart University senate and to the Balıkesir National Educational Directorate. The study was implemented after the required permissions were obtained. Before beginning the implementation of the pretest, the researcher visited the school and carried out activities to get acquainted with the children there. The researcher observed the children and their dialogues in the classroom for the first two days and then spoke to the pupils about the activity that they would be participating in. In this period, the children were given brief information about the activity and it was seen that they were interested in participating. Later, when the pretest began to be implemented, each student was brought into the school library and administered the test individually. The pretest took an average of 35-40 minutes to complete with each child.

The classroom teacher played a passive role in the educational activity. The classroom teacher carried out routine activities with the children from 12:30 p.m. - 3:00 p.m. after which the researcher conducted the study activity from 3:00 p.m. - 5:30 p.m. A corner of the classroom was arranged to accommodate the students' storyline activities. To prepare to the fullest and set out a plan for the study, a comprehensive scan of both the national and international literature was carried out. Additionally, in order to avoid any errors in the activity plan, the founders of the storyline method, Steve Bell and Sallie Harkness, were contacted in writing and the plan was drawn up on the basis of the worksheets that they sent to the researcher. Moreover, as it had been seen that there were two other studies conducted on the storyline method, contact was made with the authors of those studies as well. The 7-week activity plan was prepared as a result of this fieldwork. To avoid the possibility that the children would distance themselves from the storyline method, different activities were planned for each day. In setting up the program for teaching with the storyline method, various activities were scattered over the different sub-domains of the elementary school preparedness concept. The process of the activities conducted in the light of the research and review is described below.

1. Introduction: The researcher set up the framework for the story. At this stage, the researcher explained to the children how the process would work, how long it would take, and what the activities would be like. For one week, the researcher spoke to the children about the planet we lived on. The children revealed how much they knew about other planets and this served to whet their curiosity.

2. Telling the story: This stage, in which the story was told to the children and the activities were conducted in order, continued for 7 weeks. The plot, characters, events and the climax of the story were structured at this stage.

After spending 1 week on preparing the children for the story in the introduction stage, the researcher started telling the story: Once upon a time, there was a happy Prince who lived on a planet very, very, very far from the Earth. This prince had sparkling blond hair and he always had a smile on his face. The name of the planet the prince lived on was Jupiter." After these sentences, the children were asked some key questions: How do you think people become princes? How do they dress? What would be the differences between princes on other planets and princes on our own planet? What is the difference between the planet of Jupiter and our own planet? Could there be pets living among the living creatures on other planets? This continued for 2 days.

After setting up the idea and the framework for the story, the children cooperated in making up characters outside of the prince who could be in the story. Characters were thought up such as the prince's mother, father, siblings, people living in the palace, as well as different pets that the prince

could have. The children then decided that fairies would be living with the prince in the palace and they made up goodhearted fairies that inhabited the palace. The children decided that the prince would have a sister. Later, a discussion was conducted about the planet Jupiter, which the prince was living on. The children were asked what our own planet, the Earth, was like. They were asked to provide some examples about the types of earth surfaces, the structures and features of the houses on Earth, and the other living creatures that lived with us on the planet. Videos in which other planets were introduced were watched together. The children were told that the Little Prince's planet had a large desert on it. The children were then asked key questions about how one could live in the desert, what was needed to be able to live in the desert, and which animals could live in the desert. In addition, ideas were thrown about as to why the Little Prince had come to our classroom. Based on these ideas, a consensus was reached that the Prince had come to our classroom to help us and that there were all kinds of different problems on other planets. The children were taught that there were 7 planets including our Earth. Starting off from this point, the activities for the next weeks were planned. Each week a problem on a planet was solved and thus for 6 weeks, learning was achieved on the basis of 6 different problems and on information about 6 different planets. These activities had been exhibited on the boards in the classroom prior to the activity. In the last week, a party was organized to see the Little Prince off and after the party, the activities were exhibited in school for all to see.

Data Analysis

The SPSS 18.00 program was our choice for analyzing the data obtained in the study. The data resulting from the experimental research were analyzed using the non-parametric Wilcoxon signed ranks test. The reason we chose to use a non-parametric test was because the groups did not display normal distribution and also because the group total was less than 60 children. In the analysis of the data, it was found that in the posttest of the experimental and control groups, the children in the experimental group performed better than the control group in the subscales of socio-emotional development, science skills, mathematical skills, self-care skills and mental-language development.

Results

As a requirement of the study model, the experimental and control group were administered a pretest; the results of this pretest can be seen in Table 1:

Table 1. *Comparison of Pretest Results of Experimental and Control Group Children on the subtests of the Marmara Elementary School Preparedness Scale*

		n	Rank Means	Rank Total	z	p
Socio-emotional Development	Negative Ranks	18	11.06	199.00	2.355	0.19
	Positive Ranks	4	13.50	54.00		
	Equal	1				
Science Skills	Negative Ranks	15	10.87	163.00	1.670	0.95
	Positive Ranks	6	11.33	68.00		
	Equal	2				
Mathematical Skills	Negative Ranks	13	10.81	140.50	.870	.384
	Positive Ranks	8	11.31	90.50		
	Equal	2				
Self-care Skills	Negative Ranks	17	12.18	207.00	2.100	.036
	Positive Ranks	6	11.50	69.00		
	Equal	0				
Mental-Language Development	Negative Ranks	19	11.58	220.00	2.494	0.13
	Positive Ranks	4	14.00	56.00		
	Equal	0				

$p<0.05$

The non-parametric Wilcoxon signed ranks test was preferred in the comparison of the results of the pretest. According to the results of the pretest administered to the experimental and control groups prior to the study, it was found that the children in the control group performed better in the subscales

of socio-emotional development, self-care skills and mental-language development ($p<0.05$). Since it would not have been appropriate to subject preschool children to an intelligence test or other type of test, the study was conducted with a group that yielded a lower statistical outcome in the pretest. According to the results of the pretest applied to the experimental and control groups, no significant difference was observed between the two groups in terms of science skills or mathematical skills ($p>0.05$). The lack of a significant difference in these results indicates that the children in the experimental and control group exhibited similar characteristics in the subscales of science skills and mathematical skills.

As a requirement of the study model, the experimental and control group were administered a posttest at the end of the study; the results of this posttest can be seen in Table 2:

Table 2. *Comparison of Posttest Results of Experimental and Control Group Children on the subtests of the Marmara Elementary School Preparedness Scale*

Sub-tests		n	Rank Means	Rank Total	z	p
Socio-emotional Development	Negative Ranks	2	1.75	3.50	4.099	0.00
	Positive Ranks	21	12.98	272.50		
	Equal	0				
Science Skills	Negative Ranks	0	0.00	0.00	4.202	0.000
	Positive Ranks	23	12.00	276.00		
	Equal	0				
Mathematical Skills	Negative Ranks	14	13.18	184.50	1.887	.059
	Positive Ranks	8	8.56	68.50		
	Equal	1				
Self-care Skills	Negative Ranks	17	12.18	207.00	2.100	.036
	Positive Ranks	6	11.50	69.00		
	Equal	0				
Mental-Language Development	Negative Ranks	0	0.00	0.00	4.199	0.00
	Positive Ranks	23	12.00	276.00		
	Equal	0				

$p<0.05$

When the posttest of the experimental and control group children were evaluated in terms of the difference in their preparedness for elementary school, it was found that the difference was significant in favor of the experimental group of children in mathematical skills, science skills, socio-emotional, mental and language development and in terms of their self-care skills ($p<0.05$). Based on these results, it can be said that the storyline method had a positive effect on the mathematical skills, science skills, mental and language development, and self-care skills of the students in the experimental group.

Discussion and Results

Tepetaş (2011) carried out a study to measure the improvement in the basic conceptual knowledge levels of 6 year olds who had been exposed to the storyline method. It was observed in this study that the students exposed to the storyline method were more successful in terms of school preparedness and from the perspective of individual social awareness. The storyline method implemented by Avcı and Yüksel (2013) aimed to measure the impact of the technique on students in a 4th grade science and technology class. It was reported that the students taught using the storyline method were more dedicated to the learning process and exhibited an improvement in their motivation. Eren (2015) conducted a study to measure differences among students being taught with the storyline method in their outlook on respecting differences. It was found in the study that students being taught with the storyline method were more productive in learning respect for differences compared to students following the current curriculum. In a study by Barrett (2010), it was observed that children's motivations as well as their thoughts and experiences showed a notable improvement under the storyline method. Ahlqhist (2012) in Sweden attempted to use the storyline method in teaching English. The results of this study pointed to increased cooperation among the students being taught

with the storyline method. In 2007, Mcblain conducted a study to examine the impact of the storyline method on creativity. The results pointed to the observation that the storyline method made a positive contribution to creativity.

In a study by Demircioğlu, Dinç and Çelik (2013), the researchers explored the impact of the storyline method on 6th grade students' understanding of the concepts of physical and chemical changes. According to the study outcome, it was concluded that the method helped the students to build a meaningful bridge between chemistry education and their skills of daily living. It was stated however that the storyline method was not by itself sufficient in chemistry education. We found in our study that education enhanced by the storyline method made science skills more concrete for preschool children and in this way made learning more permanent. Akman, Akman, Üstün and Güler (2003) aimed in their study to determine whether 6 year-old children in preschool used basic scientific processes in learning science. It was found at the end of the study that there was a correlation between the education given at the schools the children attended and their scientific process skills, this correlation stemming from the different ways the teachers taught the various subjects. In a study by İnan (2007), children taught using the Reggio Emilia approach were found to have greater interest in learning science. Ayvacı (2010) reported that a planned schedule of science activities could have a positive effect on the scientific process skills of preschool children. In a study by Bilaloğlu (2006), it was determined that teaching the subject of the immune system to preschool children using the method of analogy was more effective than teaching with traditional methods. Nuhoğlu and Ceylan (2012) assert that carrying out more activities in the preschool program to improve children's skills of estimation and deduction is more useful in helping children develop their scientific process skills. Büyüktaşkapu, Çeliköz and Akman (2012) studied the Effect of a Constructivist Science Education Program on the Scientific Process Skills of 6 year-old Children and found that teaching scientific process skills using a constructivist approach centered on the student and consequently achieved permanent learning while increasing motivation.

Coşkun (2013) examined the impact of the storyline method in teaching mathematical concepts on attitude and achievement. The storyline method was used to teach whole numbers and absolute numbers and at the end of the process, it was determined that children taught with the storyline method had a higher level of achievement but that the method applied to mathematics education did not have any impact on their attitude toward mathematics. Yılmaz-Bulat and Dikici-Sığırtmaç (2006) attempted a study of 6 year-olds to observe the effect of musical games on their learning numbers and numerical concepts. The study outcome was that children who learned the concept of numbers and mathematical operations with the help of music were more successful than children following a regular syllabus. The concept of shape is one of the important concepts children must learn. "Shape lies at the base of algebra, geometry, calculus and other fields of mathematics." In early childhood, children learn that all substances and entities around them each have a shape and that this is an important characteristic that differentiates one substance or entity from another. Thanks to art, children can learn to recognize the shapes they see around them (Eliason and Jenkins, 2003). Clements and Samara (2009) report that teaching geometry to preschool children sets a foundation for learning geometry later on and actually affects a child's performance in the discipline.

In a study by Creswell (2007) in which the ideas of John Dewey are compared with the 6 main points of the Storyline method, it is stated that children who are taught with the storyline technique are more able to recognize phenomena in daily life and are better poised to make use of their daily living skills. Gazezoğlu (2007) explored the impact of children learning by playing games at preschool on the self-care skills of 6 year-old children. The study's conclusion was that the children in the program were ahead of the control group in terms of being able to follow the rules of cleanliness, to put on and be aware of their own clothes, to rest, and to protect themselves from accidents.

Yiğit (2007) used the storyline method to teach the subject of "Our Country's Resources" in the 6th-grade Social Studies class. At the end of the process, it was seen that the students' achievement levels had risen. Similarly, in a study in which Bacak (2008) used the Storyline method in a 5th-grade Social Studies class, it was observed that pupils who had been exposed to the method displayed an increase in creativity and academic achievement. Moreover, Gürol and Kerimgil (2012) in another study found that the storyline method enhanced children's creativity but also noted that the productivity of the

storyline method was dependent upon the student's willingness. In a study by Andrew S. Gordon and Nicholas V. Iuppa (2006), the storyline method was used in a drama class where it was seen that the method improved creativity. It was seen in the drama work carried out as part of the storyline method that the participants felt more comfortable and did not feel challenged in trying to express themselves. McBlain (2007), in a study titled "The Storyline Method-A Creative Approach," found that the method helped children develop their creativity.

In the present study, conducted in the Edremit district of Balıkesir during the 2015 - 2016 academic year with 5 year-olds attending Sarıkız Preschool, a program of education based on the Storyline Method was carried out for the purpose of measuring the children's level of preparedness for elementary school. Using the Marmara Elementary School Preparedness Scale, the children's readiness for elementary school was assessed and the results of the study based on the research questions were as set out below:

1.According to the pretest data obtained from the children in the experimental and control groups on the Marmara Elementary School Preparedness scale, it was found that there was no significant difference in the pretests in terms of the pupils' work in science and mathematics.

2.According to the pretest data obtained from the children in the experimental and control groups on the Marmara Elementary School Preparedness scale, it was found that there was a significant difference in the pretests in favor of the control group in terms of the pupils' socio-emotional development, self-care skills, and mental and language skills.

3.In terms of the level of preparedness for elementary school of the children in the experimental and control groups, the difference in their posttests displayed a significant difference in favor of the experimental group in the areas of mathematical skills, science skills, socio-emotional, mental and language skills as well as self-care skills.

Recommendations

This study made it clear that teaching using the storyline method has a positive impact on children. Children taught with the storyline method are given the opportunity to actively participate in class and to achieve permanent learning. Since the program of education prepared by the researcher was specifically tailored for activities in mathematics and science, an extremely positive improvement was seen in mathematical and science activities. It is therefore believed that using the storyline method in order to contribute to the development of mathematical and science skills in preschool children will be a very productive endeavor. It was observed throughout the study that education using the storyline method made a positive contribution to children's socio-emotional, mental-language and self-care skills. This may suggest that the storyline method encouraged the students to work cooperatively, giving them the opportunity to learn by doing and experiencing.The observations of the children's interaction with their classroom teacher and the researcher's own insight into the study indicated that the storyline method made a positive impact on the children's creative development. No study however has been conducted in this context. It might be suggested that further research be carried out to explore the effect of education using the storyline method on children's creative capabilities. Although there are many examples of the storyline method around the world, there is only a limited number of studies on the technique in the Turkish literature. These studies may be propagated through the work of academics and teachers.

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