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The Use of Questioning Strategies in the Development of Critical Thinking Skills in Children: A Qualitative Study of the Socratic Method

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Abstract
The present study examined the use of the Socratic method in developing children's critical thinking skills. Accordingly, the study group consisted of fifteen 5–6 year-old kindergarteners along with their 2 teachers. The study is a case design study which is one of the qualitative research methods. A Socratic method-based education program prepared by the researchers was implemented twice a week for 10 weeks. The research data were obtained via "Demographic Information Form", "Interview Form" and "Video Recordings". In the analysis of the data, content analysis was performed using the NVIVO 12 Plus program. Themes, subthemes and categories were formed depending on the coding. As a result of the study, two themes were obtained. Namely, critical thinking behaviors and non-critical thinking behaviors, and categories related to these themes were generated. When the program implemented in the study was examined, the frequency of children's critical thinking behaviors increased from the first quarter to the fourth quarter, while the frequency of children's behaviors not directed towards critical thinking decreased from the first quarter to the fourth one. According to the results of the research, which were also supported by the teachers' opinions, it was concluded that the education program prepared according to the Socratic method had a positive contribution to the development of critical thinking skills of 5–6 year old children. It can be said that the Socratic method can be used in early childhood education to improve children's critical thinking abilities.

Keywords Preschool education · Critical thinking · Socratic method · Questioning strategies · Qualitative study

Introduction

Critical thinking is derived from two words of ancient Greek origin: kriticos (insightful judgment) and kriterion (standards). According to this, etymologically it is expressed as "*insightful judgment based on standards*" (Paul and Elder, 2013, p. 27). Although there are different definitions in the literature regarding the concept of critical thinking (Demirel, 2005; Ennis, 1987; Gundogdu, 2009; Lipman, 1987; Paul and Elder, 2013; Pirozzi, 2003; Sternberg, 1986), it can be said that it is the process of thinking about thinking. It is also reaching an impartial judgment by using appropriate evaluation criteria in order to improve the quality of thinking about any subject.

In the process of developing a democratic society, educational institutions are seen as the most effective tools, and raising critically thinking individuals has become one of the main goals of these institutions (Doganay et al., 2007; Keskin & Sahin, 2018; Seferoglu & Akbıyık, 2006). However, when the classifications of 21st century skills are examined it has been determined that most of them (P21, EnGauge, ATCS and NETS/ISTE) include critical thinking skills (Thoughtful learning, 2019; Voogt & Roblin, 2010). Therefore, it can be concluded that critical thinking is an important skill that has become the target of educational programs for a democratic and participatory society in the 21st century.

It is explained that the traditional education approach is not suitable for the development of critical thinking skills

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and an environment supporting students' thinking skills should be prepared (Demirel, 2005; Nosich, 2016). In this process, techniques such as the six thinking hats, brainstorming, question and answer can be used (Bastopcu, 2018; Kaya, 2006; Sensekerci & Bilgin, 2008). In addition, it is stated that one of the methods that can be used in the development of critical thinking skills is the Socratic method (Jensen, 2015; Oyler & Romanelli, 2014). The Socratic method is based on the question and answer technique, which is among the effective discussion methods of teaching through invention (discovery) (Aydin, 2001; Cengizhan, 2016; Sonmez, 2015). It is explained as the method that Socrates used in philosophical discussions adapted to teaching (Aydin, 2001).

According to Garlikov (2001), the Socratic method is teaching by asking instead of telling. This method is a tool used in teaching and evaluating based on questions and discussions that guide students to increase understanding (Maxwell, 2009; Paul & Elder, 2008). The Socratic method is seen as a powerful teaching method because it forces learners to think critically and ensures their active participation (Shaw, 2008). It is considered a popular teaching method that teaches students how to produce thought-provoking questions and thus develops their critical thinking skills (Ertugrul & Inan, 2009). Delic and Becirovic (2016) stated that when supported by other pedagogical techniques and when applied appropriately, the method will increase self-development, learning quality and critical thinking, as well as provide effective learning. Considering all the information, it can be inferred that the Socratic method is closely related to critical thinking skills.

Although it is stated that acquiring critical thinking skills is a difficult and time-consuming process that requires knowledge, experience and effort, it is explained that it can be acquired in all age groups (Demirel, 2005; Kaya, 2006; Sonmez, 2015). However, when studies on critical thinking skills are examined, it is determined that the number of studies conducted with preschool children (Aubrey et al., 2012; Chandra, 2008; Daniel & Gagnon, 2012; Karadag & Demirtas, 2018; Kim, 2016; Tozduman Yaralı, 2019) is small. On the other hand, it has been observed that the Socratic method, which is recommended to be applied at all levels from preschool education to university (Emir et al., 2012; Gronke, 2006), is used especially as the basis of philosophy activities with children (Yakar, 2017).

However, based on the idea that the Socratic method can be used as a teaching method in its own right, apart from philosophy activities with children, the research problem was articulated as follows: "How did the education program prepared with the Socratic method promote children's critical thinking skills?" It was thought that the research would yield effective results regarding the development of critical thinking skills in pre-school education. It was also thought that the research would make important contributions to the field in terms of enriching the methods and techniques used in pre-school education.

Method

Research Model

The research was planned as a case study utilizing a qualitative designs. Case studies are defined as studies in which the researcher collects in-depth information about real life, a limited situation (or situations) within a certain period of time through multiple information sources such as observations, interviews, audiovisual recordings (Creswell, 2013). The most basic feature of case studies is the limitation of the situation in the study. In other words, the subject to be researched is a limited system (Stake, 2005). Accordingly, Merriam (2013) stated that the situation can be a single institution, a program, a group, a society or a special policy that is an example of a phenomenon. The situation is determined as the education program prepared according to the Socratic method.

Participants

The study group of the research was determined by purposive sampling. Creswell (2013) defines purposive sampling as the researcher selecting individuals or places that can provide information about the study purpose. Accordingly, a group is selected as the study group to obtain information. In this context, the study group consisted of fifteen 5–6 year-old children and their 2 teachers who were attending Gazi University Practice Kindergarten in the Spring Term of the 2017–2018 Academic Year. Eleven children (73%) were in the five-year-old group, and 4 of them (27%) were in the six-year-old group. Eight (53%) of them were girls and 7 of them (47%) were boys. One of the teachers in the study group was 25 years of age and the other one was 23 years of age.

Data Collections Tools

The data collection tools of the study consist of "Demographic Information Form", "Teacher Interview Form" and "Video Recordings". The demographic information form included the date of birth and gender information of the children in the study group. The teacher interview form consisted of seven questions and sub-questions related to these questions. It was prepared by obtaining expert opinions from a total of five experts, including two from the Department of Curriculum and Instruction, another two from the Department of Preschool Education and one from the Department of Child Development. In the study, the Socratic method-based education program applications were recorded with a

camera placed in an appropriate place in the classroom. A total of 20 activities were recorded and each recording lasted between 30 and 40 min. The researcher kept notes regarding the application process.

Procedure

In the first stage of the data collection process, the necessary permissions were obtained from the Ankara Provincial Directorate of National Education and two sample activities of the critical thinking education program were carried out as a pilot application in a kindergarten affiliated to primary school. The activities described applied to the pilot application group, which consisted of 20 children; 11 girls and 9 boys whose consent forms were taken before the video-recordings. These recordings were then watched by the researcher and the thesis advisor and it was decided that the content of the activities and the questions related to these activities were clear and understandable.

In the main application process of the research, after getting the necessary permissions from the Child Development Research, Application and Education Center Directorate the study started with fifteeen 5–6 year-old children who were attending Gazi University Application Kindergarten. During the process, 20 activities, each lasting approximately 30–40 min, were implemented by the researcher for a total of 10 weeks, as twice a week. In the activities, first a preliminary study was conducted as a preparation for the main topic. Then a Socratic method-based discussion was held in line with the possible questions written in the plan, together with the presentation of a visual, auditory or tactile stimulus related to the main topic. Finally, a consensus was reached on the questioning carried out in each activity and an evaluation was made.

During the implementation of the activities, a round seating arrangement was organized where both the implementer and the children could see each other easily. During this process, the environment was set as in where they listened to each other, waited until it was their turn to speak, were respectful to each other and could express their ideas freely. After each activity, an additional activity supporting the previous one was left for the classroom teacher for the next day. A sample activity is provided in Appendix 1. The practices were recorded with a video camera. In order not to distract the children, a tripod was not used except for the very first activity. At the end of the implementation process, an appointment was made with both teachers and interviews were conducted with each one separately.

Data Analysis

Content analysis was performed using the NVIVO 12 Plus program in the analysis of the data. Creswell (2015) considers the qualitative data analysis process as an inductive structure. Accordingly, in the research, coding was first carried out in accordance with the data analysis process and then categories, subthemes and themes were created in line with the relationships among the codes. The results were presented through figures and tables and direct quotes were included.

In the study, qualitative data collection techniques were diversified as interviews, video recordings and researcher notes, depending on the enrichments mentioned by Patton (1999) for the verification and validation of qualitative analyses. In addition, expert review was consulted and feedback was received during the review of the findings. According to this feedback, the categories related to the themes and the codes related to the categories were returned to repeatedly until saturation was reached regarding the analysis of the data. A co-coder was consulted in order to ensure intercoder reliability. Accordingly, the agreement percentage for the codes obtained from the "Teacher Interview Form" was calculated as 88.4%, and the agreement percentage for the codes obtained from the video recordings of the Socratic method-based education program applications was calculated as 89.7%. Miles and Huberman (2016) state that the agreement percentage should be at least 70%. Accordingly, it can be said that the agreement between the coders in this study was at a high level.

Results

The findings of the sub-problems of the research are presented below.

Findings of the First Sub-problem

The model created for the coding obtained from the video recordings regarding the research question "Taking the application records in consideration, how did the Socratic method-based education program contribute to children's critical thinking skills?" is presented below.

As shown in Fig. 1, a number of items were grouped under the themes critical thinking behaviors and non-critical thinking behaviors. Accordingly, critical thinking behaviors consisted of the categories of explanation, distinguishing, simile, inference, offering solutions and suggestions, evaluation, flexible mindedness, expressing one's idea, generalizing, relating, comparing, developing rules, asking questions, quessing and defining. The theme of non-critical thinking behaviors consisted of the categories of indifference, irrelevant responding, not thinking about possibilities, repetition of what is said and misunderstanding.

Sample sentences from dialogue related to the distinguishing category were:



Fig. 1 Model of the contribution of the socratic method-based education program to children's critical thinking skills

Researcher: "So, can something that makes one person happy make everyone happy?"

C 12: "No. Because some people may not like it."

C 2: "For example, let's say I saw a picture and I chose it, but E. T. may not have chosen the one I did."

Sample sentences from dialogue related to the inference category were:

C 14: "We were in one of my friend's room and s/he was happy when we played on her/his table there. I saw that s/he brightened up."

The researcher's note regarding the categories of evaluation was:

At the end of the activity, those who liked, who did not like and who were undecisive ones were asked. One person was undecisive, the others liked it. Everyone was asked whether they listened to each other or not and a few children answered as "no". Those who participated and who did not listen were asked. The group stated that a few children did not listen.

Sample sentences from dialogue related to the flexible mindedness category were:

Researcher: "For example, do all birds fly?"

C 14: "Some cannot."

Researcher: "So, is it always fair to vote?"

As a group: "No."

Sample sentences from dialogue related to the category of expressing one's idea were as follows:

Researcher: "So, are you free?"

C 14: "No".

Researcher: "Why?"

C 14: "Because sometimes we can go out of the school and sometimes we cannot."

Another example was:

Researcher: "Who is called "a good person"?"

C 14: "A person who doesn't cut down trees."

A sample sentence from dialogue related to the category of generalizing was:

C 9: "My mom is happy when I hug her."

A sample sentence from dialogue related to the category of comparing was:

C 13: "My sibling is very happy when s/he gets on the swing and gets even happier when I swing her/him."

A sample sentence from dialogue related to the category of developing rules was:

C 12: "And when the ambulance arrives, if there is someone inside, it has to pass through the red light and the cars have to move to the side so that the ambulance can pass."

Sample sentences from dialogue related to the guessing category were:

Researcher: "Where do you think these people learned to use this hanger in different ways?"

C 2: "They might have taken a course."

Sample sentences from dialogue related to the defining category were:

C 2: "We used to have kings and they were giving orders to us. But now we are free and can do what we want."

Researcher: "So what does freedom mean?"

C 2: "Because it means republic."

C 12: "It means flying over the clouds."

Sample sentences from dialogues related to the category of indifference in the theme of non-critical thinking behaviors were:

Researcher: "Z. Can you tell me?"

C 8: "I don't want to."

When the dialogue for the category of irrelevant responding were examined, the answers that strayed from the main topic are considered such as those in the following example:

C 2: "We should say "thank you" when something we want happens." (Regarding the discussion of what is being happy? it was said that we get happy when something we want happens and this answer was given at the time.)

A sample sentence of dialogue for the category of misunderstanding was:

C 14: "Teacher, snowballs don't bounce." (Regarding the discussion of Do all balls bounce?, this was the answer given.)

Examples of children's behaviors related to critical thinking and behaviors not related to critical thinking are presented above. In addition, in the study, the Socratic method-based education program applications were divided into four equal quadrants. The critical thinking behaviors and behaviors not related to critical thinking in the video recordings of the applications were examined and the frequency of these behaviors was determined.

When Table 1 is examined, it is seen that the total number of children's critical thinking behaviors observed in the video recordings is 906. Of these behaviours, 158 were observed in the first quarter, 195 in the second quarter, 216 in the third quarter, and 337 in the fourth quarter. In addition, the frequency of children's positive behaviors was recorded as 17.44% in the first quarter, 21.52% in the second quarter, 23.84% in the third quarter and 37.20% in the fourth quarter regarding the row percentage of the total number of behaviors. Accordingly, the frequency of children's critical thinking behaviors showed an increasing frequency from the first quarter to the fourth quarter.

When Table 2 is examined, it can be seen that the total number of children's non-critical thinking behaviors observed in the video recordings is 91. Of these behaviors, 53 were observed in the first quarter, 22 in the second

Table 1 Frequency and percentage values of critical thinking behaviors according to the quarter of application of activities

Behaviors	First quarter		Second quarter		Third quarter		Fourth quarter		Total	
	f	%	f	%	f	%	f	%	f	%
Explanation	64	26.01	37	15.04	55	22.35	90	36.58	246	100
Distinguishing	3	13.64	13	59.09	1	4.55	5	22.73	22	100
Simile	0	0.00	3	75.00	1	25.00	0	0.00	4	100
Inference	6	12.77	16	34.04	13	27.66	12	25.53	47	100
Offering solutions and suggestions	2	2.60	21	27.27	13	16.88	41	53.25	77	100
Evaluation	8	18.18	10	22.72	11	25.00	15	34.09	44	100
Flexible mindedness	3	12.50	1	4.17	3	12.50	17	70.83	24	100
Expressing one's idea	40	15.93	35	13.94	78	31.07	98	39.04	251	100
Generalizing	2	22.22	4	44.44	0	0.00	3	33.33	9	100
Relating	9	18.00	15	30.00	9	18.00	17	34.00	50	100
Comparing	1	14.29	3	42.86	2	28.57	1	14.29	7	100
Developing rules	10	38.46	0	0.00	13	50.00	3	11.53	26	100
Asking questions	0	0.00	0	0.00	0	0.00	8	100.00	8	100
Guessing	3	4.48	30	44.78	10	14.93	24	35.82	67	100
Defining	7	29.17	7	29.17	7	29.17	3	12.50	24	100
Total	158	17.44	195	21.52	216	23.84	337	37.20	906	100

Table 2 Frequency and percentage values of non-critical thinking behaviors according to the quarter of application of activities

Behaviors	First quarter		Second quarter		Third quarter		Fourth quarter		Total	
	F	%	f	%	f	%	F	%	F	%
Indifference	2	100.00	0	0.00	0	0.00	0	0.00	2	100
Irrelevant responding	3	37.50	2	25.00	1	12.50	2	25.00	8	100
Not thinking about possibilities	1	50.00	0	0.00	1	50.00	0	0.00	2	100
Repetition of what is said	46	62.16	18	24.32	6	8.11	4	5.41	74	100
Misunderstanding	1	20.00	2	40.00	1	20.00	1	20.00	5	100
Total	53	58.24	22	24.18	9	9.89	7	7.69	91	100

quarter, 9 in the third quarter, and 7 in the fourth quarter. In addition, the frequency of children's non-critical thinking behaviors according to the row percentage of the total number of behaviors is 58.24% in the first quarter, 24.18% in the second quarter, 9.89% in the third quarter and 7.69% in the fourth quarter. Accordingly, the frequency of children's behaviors not aimed at critical thinking showed a decreasing frequency from the first quarter to the fourth quarter.

When Tables 1 and 2 are examined, it is seen that the total number of observed behaviors throughout the application process is 997, with 906 behaviors related to critical thinking and 91 behaviors not related to critical thinking. Accordingly, it was concluded that 91% of the total observed behaviors were behaviors related to critical thinking and 9% were behaviors not related to critical thinking.

Findings Related to the Second Sub-problem

The model created for the research question "What are the teachers' opinions about the contributions of the Socratic method-based education program to children?" is presented below.

As seen in Fig. 2, the teachers' opinions are grouped under the themes of positive and negative opinions. Positive opinions consisted of two sub-themes: cognitive and affective. The cognitive sub-theme consists of the categories of study, evaluation, increase in attention span, listening, noticing, exchanging ideas, generating ideas, expressing, overarching, explaining the reason, persistence in learning, questioning, and commenting. The affective sub-theme consisted of the categories of accepting ideas, persuasion, collaborating, self-reliance, be motivated, persistence in learning, sharing, competing, respecting, waiting for one's turn, taking responsibility, asking for a voice, and admonishment.

Teacher opinions regarding the listening category included:

Teacher 2: "They mostly listened to each other. When they didn't listen, they started saying the same things anyway. Then they were reminded of their friends saying the same things. In that case, they would say, okay, then I'll say something else."

Teacher 1: ".In the beginning, listening was very difficult. … They were not listening to each other at all. Then they started listening to each other. It is the same now. One of them is definitely waiting for the other to finish speaking. That is why I think you have contributed a lot to us."

Teacher opinions regarding the generating ideas category included:

Teacher 1: "When we first started, for example, while one of them was expressing his/her opinion, the other one was saying the same thing. Both of them were raising their hands, saying the same things. While one of them was saying the same thing as the other, I saw that each child started to express different ideas when we started comparing the activities with you, from the beginning to the end."

Teacher 2: "Their thinking skills have improved. What can we do? Because they were constantly thinking about what could happen, raising their hands to participate."

Teacher opinions regarding the questioning category includeds:

Teacher 2: "We talked about what would happen, for example, if we do not offer our seats to the elderly, if the car does not stop at the traffic lights, and why should we do this. The talks were always about in the form of what would happen and why we should do it. I think this is a good basis for children to question." It has been stated that there are developments in many cognitive skills in terms of teacher opinions, as seen in the examples.

Teacher opinions on the category of accepting ideas regarding the affective sub-theme included:

Teacher 1: "I think they realize that they are different. I think they have accepted that they may have different ideas because they are different. There has really been a lot of progress in this regard. At first, the idea was like, 'if I think like this, then that's how it is'."

Teacher opinions regarding the respecting category included:

Teacher 1: "For example, his mother and father are different. Her/his lifestyle is different. S/he may think differently than me. If my opinion is like this, then s/he may have an opinion too."



Fig. 2 The model for the education program based on the Socratic method and its contributions to children

Teacher 2: "As I said, we had a lot of trouble in the beginning. For example, in group activities everyone wanted to have their say in the group or in games. However, after the activities we did with you, it is easier now as a group to decide about which activity we should do. Now, when an activity is going to be carried out in a group, each member gives importance to the opinion of the other."

Teacher opinions regarding the category of asking for a voice included:

Teacher 1: "Also, asking for permission to speak was very important to me. Because noone was doing that at the beginning."

As indicated in Fig. 2, there are also negative opinions in the model regarding the contribution of the critical thinking education program to children. These negative opinions consisted of the categories of not being able to understand and getting bored.

Teacher opinion regarding the category of not being able to understand included:

Teacher 2: "Perhaps some children may have had difficulty with perception. They may not have understood what was being done. Of course, not all of them. Those who comment are already clear. Those who do not comment at all or remain silent are also apparent."

Teachers opinions regarding the getting bored category includeds:

Teacher 2: "The negative aspects are that there may be times when they get bored, especially when it is long."

Teacher 1: "For example, some activities took so long, the group was a dynamic one and they were not into sitting that much. It could have been kept a little shorter."

Discussion and Conclusion

Based on the results of the study, it can be said that the theme of critical thinking behaviors and its categories overlap with the study of Facione (1990) since cognitive skills of interpretation, analysis, evaluation, inference, explanation, and self-regulation are stated as critical thinking skills. According to the findings, it was revealed that the frequency of children's critical thinking behaviors increased from the first quarter of the application to the fourth, while the frequency of children's non-critical thinking behaviors decreased.

These results are supported by studies in the relevant literature using the Socratic method. In fact, in another study conducted at the elementary school level, it was determined that students were able to emphasize the important aspects of the thoughts they produced, exemplify their thoughts, indicate their relevance to the topic under discussion, look from different perspectives, and express the consistency of their thoughts. Accordingly, the themes of precision, clarity, relevance, breadth, and rationality were formed from the intellectual standards of Socratic questioning, respectively (Bülbül Hüner, 2018). In an experimental study conducted at the secondary school level, it was recorded that there was a positive and significant difference between the academic success, critical thinking skills and metacognitive awareness of the experimental group students in terms of pretest and posttest scores (Emir et al., 2012). Another study conducted at the secondary school level found that the Socratic method was quite effective in developing critical thinking skills in English language education (Jensen, 2015). In a study conducted at the high school level, it was determined that students discovered that there were questions that did not have a certain answer. There were different answers for the same question, and that they began to produce alternative answers to the answers given in class and created their own questions. It was stated that students began to develop the idea that there could be different aspects even in the answers that everyone accepted as correct, and it was explained that students' tendency towards critical thinking increased (Sisman, 2009). In a study using Socratic questioning in asynchronous discussion forums in distance education at the university level, it was concluded that this method improved students' critical thinking skills and that these skills continued to be permanent (Yang et al., 2005). Similarly, Hong and Jacob (2012) concluded that Socratic questioning in asynchronous mathematics discussion forums increased critical thinking. Another study conducted at the university level determined that Socratic questioning caused a significant positive change in students' critical thinking ability (Shahsavar et al., 2013). Oyler and Romanelli (2014) examined why critical thinking teaching methods often fail, and stated the potential benefits of the Socratic method and defined this method as a tool for teaching critical thinking. Another study concluded that educational content that explicitly addresses critical thinking skills is more effective than traditional educational methods in developing students' critical thinking skills (Hagelskamp, 2000). Accordingly, it can be said that the results of the study are consistent with the study results explained above.

Another finding of the study is that the contributions of the Socratic method to children were grouped under two themes as positive and negative opinions. Here, it can be stated that the teachers presented a very broad category framework under the cognitive and affective sub-themes determined for the theme of positive opinions. In addition, it was determined that the categories obtained here can be supported by similar studies in the relevant literature. When a philosophy education program for children aimed at questioning concepts through Socratic conversations was implemented, it is seen that it was effective on children's social skills of assertiveness, cooperation, and self-control (Okur, 2008). In the study conducted by Kanat and Temel (2019), it was concluded that the Socratic method-based education program increased the working memory performance of 5–6 year-old children, and therefore this method was a suitable method for increasing cognitive processes for working memory. In another study, it was determined that Socratic dialogue not only contributed to the correction of misconceptions of 9-year-old students but also to their thinking and learning (Chang et al., 1998). In the study conducted by Kefeli and Kara (2008) it was noted that secondary school students reasoning skills improved via Socratic method. In another study conducted at the secondary school level, it was determined that students' motivation to learn science, their positive attitudes towards socio-cognitive issues increased and they understood the subjects better (Yakar, 2017). In a study conducted at the high school level, it was noted that students were able to create new ideas based on their questions, had positive thoughts about the course, and participated in the course actively and with pleasure (Sisman, 2009). In another study, it was noted that the Socratic method increased the leadership skills of military college students (Giuseffi, 2014). On the other hand, depending on the sub-themes that emerged as cognitive and affective in the research results and the categories belonging to these themes, it can be thought that this method can also be useful in increasing children's academic success. In fact, in a study conducted by Zeybek (2019), it was determined that this method was effective in improving students' academic success and ensuring the permanence of what was learned. Similarly, in a study conducted by Korkmazer (2016), it was revealed that this method applied to secondary school students increased success compared to other methods. In another study, it was concluded that the method was more effective than classical ones in terms of understanding the subject, its effectiveness and achieving the objectives of the course (Dadı, 2013). In another study, it was concluded that students' success and attitudes increased (Bulbul Huner, 2018).

According to the research findings, the categories of not being able to understand and getting bored emerged under the theme of negative opinions on the contributions of the Socratic method to children; this was especially evident in the case of the children who did not make any comments and remained silent during the application. In the categoriy of getting bored, it was stated that children may get bored during the application due to their short attention span and being an active group. Indeed, in the studies to be conducted

with this age group, this method should be integrated into active activities and turned into a program philosophy. Otherwise, being limited to this method alone will present this situation as a quite natural result. However, both of these categories can actually be evaluated as situations that need to be taken into consideration when implementing the Socratic method with young age groups. On the other hand, the teachers whose opinions were taken in this study were those who had not received training on the Socratic method and had not implemented it. Therefore, it is thought that it is a very positive result for teachers to identify these two points that need to be taken into consideration when implementing the Socratic method, especially with young age groups.

Based on the research results, it is suggested that the Socratic method can be used as an effective method in kindergartens and preschools in order to develop children's critical thinking skills. In this regard, it is recommended that educators provide discussion environments where children can express their ideas freely, guide children with open-ended questions that can have more than one correct answer so that they can structure their own knowledge, and encourage them to ask questions. It is also suggested that children be provided with opportunities to think about dilemmas and express their ideas about them. On the other hand, it is also suggested that researchers conduct studies on teachers' questioning skills, provide teachers with training on how to prepare activities to support children's critical thinking skills, and conduct action research on the subject.

Appendix 1: I Share Fairly

Activity Type: Large Group Activity

Age Group: 48–66 Months

Materials: More walnuts than children, a new toy.
Vocabulary: Being fair, share, injustice.
Concept: Justice.
Discussion Topic: What is a fair share?

Learning Process

Warm-Up Activity

The researcher prepares a circular seating arrangement for the children on cushions or chairs. In this seating arrangement, the children count numbers up to 10. Then, according to the number the researcher says, the number of digits is counted and applauded. This is repeated several times depending on the children's situation.

Presentation of the Stimulus and Discussion

The researcher shows the children the walnuts s/he brought. They all count the walnuts together. Then they count the number of children in the class. The children's ideas on how they can share the walnuts are taken. Then the researcher continues the discussion of these ideas using the possible questions below.

- How do you think we should share these walnuts to ensure a fair one?
- If we give 2 walnuts to the older ones and 1 walnut to the younger ones, would we be doing it fairly?
- Why do you think it wouldn't be fair?
- What if we did the opposite? In other words, would it be okay if we gave 2 walnuts to the younger ones and 1 walnut to the older ones?
- So how else can we think?
- If we give 2 walnuts to girls and 1 walnut to boys, would we be distributing fairly?
- In this case, who would we be doing injustice to?
- If we give 2 walnuts to boys and 1 walnut to girls, would we be distributing fairly?
- Does anyone have any other idea about how to share them?
- Let's draw lots and give 2 walnuts to those who choose the big stick and 1 walnut to those who choose the small stick. Would that be okay?
- Do you think a fair share can be achieved by drawing lots?
- Would it be fair if we gave everyone one walnut?
- What can we do if one of our friends asks for three walnuts?
- Would it be fair if we gave one of them three walnuts and one walnut to the rest?
- We can't give three walnuts to everyone because there aren't that many. In this case, what would you say to your friend who wants three walnuts?

If there is a consensus that everyone should be given an equal number of walnuts, one for each, the walnuts are shared. However, in this case, there are still walnuts left.

- What can we do with the remaining walnuts?
- What else can we do?
- How can we share the remaining walnuts?
- Does anyone have any other ideas?

Children's opinions are taken into consideration through these questions, and the activity is completed by deciding on a solution that everyone agrees on.

Evaluation

To evaluate the questioning process, the following questions are discussed with the children by ensuring the participation of all.

- Did everyone express their opinions on the sharing of the walnut?
- Did we listen to each other?
- Did everyone understand what each of you meant?
- Did your opinion change or remain the same at the end of the discussion?
- Did everyone agree at the end of the discussion?

Additional Activity

(Implemented by the class teacher 1 day later.)

The teacher brings a new toy to the classroom. The children's opinions are obtained by asking the following possible questions to them about sharing the toy. The most liked solution by the group is selected by voting.

- Who wants to play with this toy?
- What solutions can we find to ensure fair sharing?
- How should we decide who will play first with the toy?
- If it will be in turns, how should we arrange this?
- Does anyone have any other ideas?
- Does everyone accept this solution?
- What are the ideas of those who do not agree with this solution?

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Informed Consent Informed consent to participate in this study was obtained from all participants and, in the case of children, written informed consent was obtained from their legal guardians.

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