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Okul Öncesi Öğretmen Adaylarının Epistemolojik İnançlarının Çocuklarla Felsefe Öğretimine İlişkin Görüşlerine Etkisinin İncelenmesi

Öz: Bu araştırmada temel amaç, okul öncesi öğretmen adaylarının epistemolojik inançlarının çocuklarla felsefe öğretimine dair görüşlerini ve kavramsallaştırmalarını nasıl etkilediğini belirlemektir. İkincil amaç ise, okul öncesi öğretmen adaylarının epistemolojik inanç düzeylerini belirlemektir. Bu amaçlara ulaşabilmek için nitel ve nicel araştırma yöntemlerini bir arada barındıran karma yöntem kullanılmıştır. Araştırma İstanbul ili YÖK'e bağlı bir vakıf üniversitesinde okul öncesi eğitim alanında öğrenim gören 52 katılımcı ile gerçekleştirilmiştir. İlk olarak nicel verilere ulaşmak amacıyla katılımcılara Öğrenmeye Yönelik Epistemolojik İnanç Ölçeği uygulanmıştır ve sonuçlar betimsel istatistik yoluyla analiz edilmiştir. Ulaşılan epistemolojik inanç puanları çerçevesinde üçer kişilik üç alt grup (alt, orta ve üst epistemolojik profil) oluşturulmuştur. Alt örneklemi oluşturan katılımcılara çocuklarla felsefe öğrenimine yönelik görüş formu uygulanmıştır. Elde edilen nitel verileri çözümlemek amacıyla sürekli karşılaştırma yöntemi aracılığıyla tümevarımsal içerik analizi yapılmıştır. Analiz sonuçları kapsamında, okul öncesi öğretmen adaylarının epistemolojik inanç puanları ortalamasının, ölçeğin genel ortalamasından yüksek olduğu görülmektedir. Aynı zamanda epistemolojik inancı yüksek olan okul öncesi öğretmen adaylarının çocuklarla felsefe öğretimi kapsamında bilim okuryazarlığı vizyonuna atıf yapmalarını, düşünme becerilerinin, merak duygusunun, çocuk merkezli yaklaşımların daha fazla üstünde durdukları görülmektedir. Ulaşılan sonuçlar ilgili literatür çerçevesinde tartışılmış ve bu kapsamda önerilere yer verilmiştir.

Anahtar Kelimeler: Okul Öncesi Eğitimi, Çocuklarla Felsefe, P4C, Okul Öncesi Öğretmen Adayları, Felsefe Eğitimi, Epistemoloji, Epistemolojik İnançlar.

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Examination Of The Effect Of Prospective Preschool Teachers' Epistemological Beliefs On Their Views On Teaching Philosophy With Children

Abstract: The primary purpose of this study is to determine how preschool teacher candidates' epistemological beliefs affect their views and conceptualizations about teaching philosophy to children. The secondary aim is to determine the epistemological belief levels of preschool teacher candidates. A mixed method, which combines qualitative and quantitative research methods, was used to achieve these goals. The research was conducted with 52 participants studying pre-school education at a foundation university affiliated with YÖK in Istanbul. First, the Epistemological Belief Scale for Learning was applied to the participants to reach quantitative data, and the results were analyzed through descriptive statistics. Three subgroups of persons (lower, middle, and upper epistemological profiles) were formed within the framework of the epistemological belief scores reached. Opinion form for learning philosophy with children was applied to the sub-samples. An inductive content analysis was carried out through the continuous comparison method to analyze the qualitative data obtained. Within the scope of the analysis results, it is seen that the average epistemological belief scores of preschool teacher candidates are higher than the general average of the scale. At the same time, it is seen that preschool teacher candidates with high epistemological beliefs emphasize the vision of science literacy within the scope of teaching philosophy with children, thinking skills, a sense of curiosity, and child-centered approaches. The results were discussed within the framework of the relevant literature, and suggestions were made in this context.
Keywords: Preschool Education, Philosophy with Children, P4C, Preschool Teacher Candidates, Philosophy Education, Epistemology, Epistemological Beliefs.

Introduction

Early childhood constitutes a strong beginning for the child's cognitive, language, motor, social, and emotional development. It forms the basis for the child's self-realization and productivity (Edie & Schmid 2007). The stimuli that the children receive, who ask questions about every situation and object they see in their lives and seek answers to the questions they ask in early childhood and the interaction they have with their peers and adults, strengthen their natural sense of curiosity (Akman, Alabay & Veziroğlu Çelik 2015: 66). This sense of curiosity supports children in early childhood to question, think and produce. Thanks to philosophy education with children, thinking, question-answer, questioning, and criticism skills develop in children, and their sense of responsibility is supported. Supporting cognitive development, one of philosophy's goals with children, will

transform children into flexible and logical-thinking individuals and positively affect children's academic success and social life when applied correctly (Asadi & Asadi 2011). It is a concept that includes mental processes such as problem-solving, reasoning, creativity, conceptualization, recollecting, classification, and planning (Siegler & Wagner-Alibali 2005). Lipman (2003) emphasizes that philosophical thought starts when they ask questions like why, how? and it develops over time (Pihlgren 2008 pp. 72-73). In this context, when the characteristics of early childhood and thinking processes are considered together, the idea emerges that philosophical thinking can be brought to children through philosophy for children (P4C) education. The philosophy approach with children is an education method created by Matthew Lipman in the late 1960s to bring philosophical questioning to children's education and is accepted worldwide (Kohan 2018). Lipman (2003) conceptualized P4C, which is based on the idea that the strengthening of children's thinking styles and thoughts should be based on the education of children, not on accidental results, as an educational approach used in schools to facilitate the development of children's thinking capacities, (Valitalo et al., 2016, pp. 79-80). Studies on philosophy with children contribute to the fact that children are individuals who can think more, make a judgment with their thoughts, and defend, justify, and question these judgments (Vansieleghem & Kennedy 2011). It is an educational program that aims to explore the relationship between the concepts of philosophy and childhood, and the arguments needed for this program are primarily based on the concept of critical thinking, which is influenced by John Dewey's pragmatic philosophy (Vansieleghem & Kennedy 2011, p. 172).

In P4C, an educational method, teachers should know what the program is about. They also need information about what works and does not work when conducting the program (Lam 2012). In the Philosophy with Children approach, teachers are called facilitators, guides, or mentors (Boyraz 2019). The teacher's role here is to ask questions and inspire students to think about the world in a way

that is based on their ideas and those of their peers and to be a guide/facilitator. In addition, preschool teachers who ask high-level questions through texts that allow children to reason should have appropriate pedagogical structures and subject knowledge to manage the process and give informative answers (Hamel et al. 2021). Especially when we consider the idea that there is a deep connection between beliefs and practices in preschool education environments, P4C education practitioners should also have an epistemological belief that is versatile and based on power sharing in the classroom (Brownlee et al. 2011: 24). Dirican and Deniz (2020) stated that children and philosophy should be given to teachers both in professional life and in education faculties with in-service training. Haynes and Morris (2011) hypothesized about why teachers do not use or find it challenging to use P4C practices; "teachers are not familiar with both the content and methods of philosophy"; "teachers who have little knowledge of philosophy in their past education may hesitate about the liberal and unexpected consequences of philosophy".

People's beliefs about the nature of knowledge and the acquisition of knowledge are defined as epistemological beliefs (Aypay 2011). The importance of epistemological beliefs is recognized in a large group of studies investigating teachers' epistemological beliefs about different cultures (Hofer 2010), certain classroom practices (Brownlee et al. 2011), and specific curriculum areas (Yılmaz & Şahin 2011). Teachers' epistemological beliefs guide classroom practices and reflect teaching models (Knapp 2016; Lee et al. 2013). In this context, teachers will likely make pedagogical decisions to adapt to student diversity in inclusive classrooms and be guided by their epistemological beliefs. Investigating the relationship between epistemological, pedagogical, and inclusive beliefs is vital to understanding the nature of inclusive pedagogies and how they are constructed (Sheehy & Budiyanto 2015). Within the framework of this theoretical rationale, it is thought that investigating the possible relationships between epistemological beliefs and children and philosophy teaching practices, starting from the teachers

in the pre-service period may contribute to a better evaluation of in-service education environments. For this reason, this study investigated how the epistemological beliefs of pre-service preschool teachers affect their pedagogical views on teaching philosophy to children.

The Significance of the Research

Philosophy education with children is based on the understanding that children can have a philosophical perspective with an appropriate education. This understanding emphasizes that thinking skills should be integrated with the primary school or even preschool education process as a prerequisite for raising children who think, desire to acquire information, are curious, and act wisely (Erdoğan 2018; Lipman et al. 1980). It is known that children's attention, reasoning, empathy, active listening and skills, use of logical argumentation, and their performance in distinguishing part-whole relationships are positively affected by philosophical questioning, especially in early childhood (McCall 2013). In P4C, an educational method, teachers should know what the program is about. They also need to have information about what works and what does not work when carrying out the program (Lam 2012). In the Philosophy with Children approach, teachers are called facilitators, guides, or mentors (Boyraz 2019). Practitioner preschool teachers should also integrate their teaching knowledge and epistemological beliefs appropriately. Epistemological beliefs, which refer to the nature of knowledge and knowledge processes, play an essential role in various academic experiences (Hofer 2000: 5-6). When evaluated in terms of P4C teaching, it can be thought that preschool teachers with multifaceted and relative epistemological beliefs will adopt the facilitating role more. Based on this rationale, the existing literature has been reviewed in detail. When the national literature is examined, it is seen that there are a small number of philosophical studies with children, and they are usually quantitative and experimental studies with the participation of children (e.g.: Taş 2017; Çayır 2015; Kefeli 2011). These

researches mainly focus on the quality of the questions asked by children (Demirtaş, Karadağ & Gülenç 2018), the use of different teaching methods in philosophy education with children (Güven 2019), and their effect on creative thinking skills (Sönmez 2016; Taş 2017). Studies conducted related to teachers and prospective teachers are on the determination of philosophical perspectives (Özer, Erginer & Erginer 2019), the effect of pre-service education on philosophical perspectives (Ex: Doğanay 2011), and the determination of epistemological beliefs (Taşkın 2013; Aytaç 2020). On the other hand, when international research was examined, it was found that most of the research were conducted using qualitative research methods (Ex: Worley 2009; Vansieleghem & Kennedy 2011; Matthews 2005). However, in most of these studies, children participate (e.g. Cleary 2011; Jahani et al. 2016). From the point of view of epistemological beliefs, the epistemological beliefs of preschool teachers and prospective teachers regarding the teaching of science or mathematics were examined (Dunekacke et al. 2016; Kutluca & Mercan 2022). However, unfortunately, there are no studies examining the pedagogical views of teachers or prospective teachers on P4C teaching.

The fact that preschool teachers have a child-centered epistemological orientation will help them reach curriculum gains in different development areas with the help of game-based pedagogical strategies (Karabon 2021). For this reason, it can be assumed that including P4C education in early childhood learning environments will contribute to achieving these goals more efficiently and creating rich contexts. As mentioned earlier, it has been claimed that epistemological beliefs are an essential factor for P4C education within the scope of this research. However, there is no research in the literature that has tested this claim in any context. Therefore, considering the gap in the literature, this study aimed to examine the effect of prospective preschool teachers' epistemological beliefs on their views on teaching philosophy to children. For this purpose, the study seeks answers to the following questions;

1. What is the level of prospective preschool teachers' epistemological beliefs about learning?
2. How do prospective preschool teachers' epistemological beliefs about learning affect their pedagogical views on teaching philosophy to children?

Method

Research Design

This study is a mixed methods type of research. Mixed methods research is the combination and integration of qualitative and quantitative methods in the same study (Molina Azorin 2016). While the data collected through the quantitative method provide access to a large number of participants, the data obtained by using qualitative methods such as observation and interviews contribute to a more in-depth examination of the research subject (Greene, Krayder & Mayer 2005: 275). The primary goal is generalizability; therefore, researchers often use quantitative methods such as questionnaires and occasional observations to collect large samples to assess the widespread nature of their findings (Myers & Powers 2017: 2). One of the prominent decisive factors in designing research as mixed methods research is research questions. Mixed methods are generally used when seeking answers to research questions that qualitative or quantitative research methods alone cannot answer (Fırat, Yurdakul & Ersoy 2014). Qualitative data supported the study after obtaining quantitative data. In this context, the Epistemological Beliefs Towards Learning Scale was applied to prospective preschool teachers in the first stage. Sub-subgroups were created in line with the scores obtained from the scale, and the qualitative research section was moved on. In the second stage, semi-structured interviews were conducted with subgroups, and answers to research questions were sought.

Study Group

In this study, third and fourth-grade prospective teachers studying Preschool Teaching at a foundation university affiliated with YÖK (Council of

Higher Education) in the 2020-2021 Academic Year Spring Semester were included. The leading sample group comprises 52 prospective preschool teachers determined by the criterion sampling method. In the criterion sampling method, the sample is formed in relation to the problem situation from people, events, objects, or situations with the qualifications determined (Büyüköztürk et al., 2008: 92). In using the criterion sampling method to determine the sample, it was based on the fact that the students continued their education in the preschool teaching undergraduate program and were third and fourth-grade students. The main reason for selecting the third and fourth-grade prospective teachers is that they have taken the teaching observation and practice courses and completed the education philosophy course.

Determination of Sub-Sample

Three subgroups of three people (lower, middle, and upper epistemological profiles) are formed by the purposeful-maximum diversity method, according to the scores obtained as a result of the Epistemological Belief Scale Towards Learning (EBSTL) applied to the prospective preschool teachers participating in the research. Purposeful-maximum sampling creates a maximal variation sample by identifying key points of variation and finding cases that differ from each other as much as possible. Using the maximum variation sample, it aims to obtain the experiences of different stakeholders in various contexts (Yağar & Dökme, 2018).

The steps taken in determining the sub-sample are as follows:

1. The Epistemological Beliefs Towards Learning Scale was applied to 52 prospective preschool teachers.
2. The mean and standard deviations of the scores obtained from the Epistemological Beliefs Scale Towards Learning were determined.
3. The scores of the students were evaluated according to the arithmetic mean and standard deviation; those with high scores were assigned to the upper,

low scores were assigned to the lower, and those with close to the mean were assigned to the middle epistemological belief profile.

Qualitative research processes were carried out with nine prospective teachers from three epistemological belief profiles (lower, middle, upper) representing at least 10% of the total participants determined in this way.

Table 1 Participant Information

Prospective Teacher*	Class Level	Epistemological Belief Score
UEP-1	4th Grade	98
UEP-2	3rd Grade	92
UEP-3	4th Grade	96
MEP-1	3rd Grade	88
MEP-2	3rd Grade	85
MEP-3	4th Grade	87
LEP-1	3rd Grade	77
LEP-2	3rd Grade	77
LEP-3	3rd Grade	73

**Prospective teachers who participated in the research were given nicknames.*

Data Collection Tools

In this study, two different data collection tools were used to answer sub-problems. These are the Epistemological Beliefs Scale Towards Learning (EBSTL) and the Opinion Form for Teaching Philosophy with Children. These data collection tools are described in detail below.

Epistemological Beliefs Scale Towards Learning (EBSTL)

To determine the epistemological belief profiles of prospective preschool teachers, EBSTL developed by SingChai, Teo and Beng-Lee (2009) and adapted to Turkish and Turkish culture by Kutluca, Soysal and Radmard (2018) was applied. As a result of the validity and reliability study of the researchers, it was determined that access to information consisted of 23 items of five-point Likert

type, which were collected under four theoretical factors, namely absolute and single reality and epistemic contradiction against genetic nature. The highest score that can be obtained from this scale is 115, and the lowest score is 23. The average score value of EBSTL is 69.

Opinion Form for Teaching Philosophy with Children (OFTPC)

Opinion Form on Philosophy Teaching with Children was used to learn the competencies and awareness of preservice preschool teachers from different epistemological beliefs about teaching philosophy with children. While creating the form, a written question pool based on the literature was created due to the literature review. Written questions created to ensure the internal validity of the prepared questions were sent to an academician who is an expert in qualitative research and preschool education. The questions were reduced by contacting the expert, and the general framework of the questions was determined. The questions, which were turned into a general structure, were sent to two academicians who are experts in teaching philosophy with children, qualitative work, and preschool education. In this context, a pilot study was conducted with three pre-service preschool teachers who were not among the participating pre-service teachers but were representative of the group to obtain information about whether the questions served the research purpose and their clarity and to ensure internal validity and external control. The data obtained from the pilot study were re-transmitted to the experts, and the final version of the form was created based on their feedback. The final form of OFTPC consists of seven open-ended questions.

The first question in OFTPC concerns the purpose and scope of philosophy teaching with children. This question was created to obtain pre-service teachers' competencies and knowledge levels about philosophy with children. The second question has been prepared within the framework of the general teaching pedagogy of philosophy with children and aims to obtain information on how pre-service teachers can teach philosophy. The third question in the form was

addressed within the scope of the teaching orientation on philosophy with children and includes the opinions of prospective teachers regarding the inclusion of children in philosophy teaching. The fourth question was added to the form within the scope of children's understandings in order to get the opinions of pre-service teachers about the situations that children may need during philosophy teaching and the convenience and difficulties they may face. Within the scope of associating the fifth question in the form with the curriculum, the sixth question was created in order to determine the teaching strategies and activities that prospective teachers can use during the preschool education curriculum and philosophy teaching with children, and the seventh question was created in order to get an answer about associating the assessment and evaluation methods that they can apply to children at the end of the process within the scope of philosophy with children.

Data Collection Process

At the beginning of the data collection process, prospective preschool teachers were informed about the purposes of the research and the course of proceeding. It was stated that the data obtained from the scale and interview questions would only be used for research purposes, and it was aimed to ensure voluntary participation. EBSTL was first communicated to prospective teachers through an online platform. It took approximately 15 minutes for a participant to answer the questions. After the prospective teachers completed the EBSTL, the answers were analyzed with the descriptive statistical method, and a total of nine prospective preschool teachers representing the lower, middle, and upper epistemological profiles were reached. The qualitative research process was started with nine prospective preschool teachers. Individual interviews were conducted with each participant through online interview platforms. A briefing was given to the participants about the structure and purpose of the OFTPC, and the questions in the form were directed to the participants one by one. During the

interview, participants had no time restriction, and voice recordings were taken with the participant's permission.

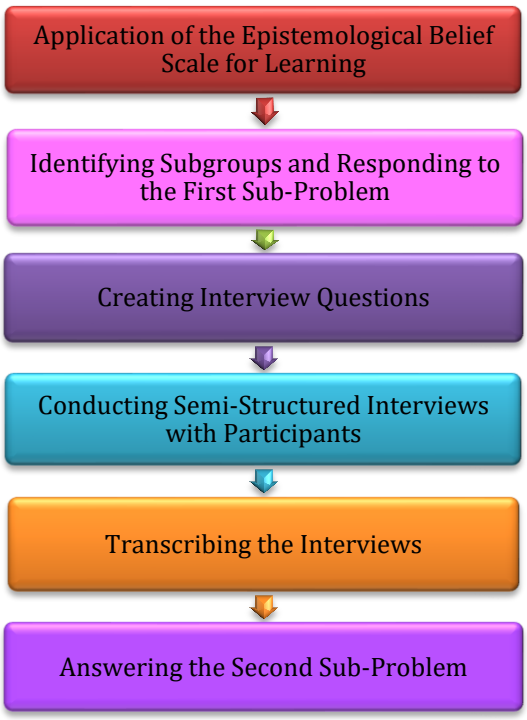

Figure 1. Data Collection Process

Data Analysis

The quantitative and qualitative data obtained from the prospective preschool teachers participating in the study were analyzed in two stages.

First, to answer the first sub-problem, the participants who participated in the research were given the EBSTL and the data obtained from the scale were analyzed with the descriptive statistical method. In line with the resulting quantitative data, the participants to be included in the subgroups were also determined.

In answering the second sub-problem, which includes the qualitative research part, the OFTPC was applied to nine participants from the determined lower, middle, and upper epistemological belief profiles, for which expert opinions

were taken and finalized afterward. The verbal data obtained from the participants were transcribed—the data, which was transformed into a general structure after being transcribed by conceptualizing. After the coding process, the responses received from the participants were divided into themes. The process of creating codes and themes is called inductive content analysis. The themes and codes created in inductive content analysis take their sources from the data set (Zhang & Wildemuth 2009). With this analysis method, the data with similarities between them are examined and brought together, and the documents related to the data obtained are systematically examined and analyzed (Yıldırım & Şimşek 2013). Inductive content analysis includes the stages of open coding, category creation, and abstraction. Open coding aims to read the data obtained from the participants and reveal the main topics; as many titles as necessary can be written to give all aspects of the content. The titles obtained after open coding are grouped as category lists. The purpose of grouping data is to reduce the number of categories to the basics by narrowing the similar and different ones into more significant and higher categories (Elo & Kyngas 2008). The themes and concepts obtained and coded from OFTPC were analyzed by comparing each other. This comparison process is called the continuous comparison method. The propositional expressions of the categories created by the continuous comparison method are compared with each other, and possible relationships between them are tried to be determined (Saldana 2019).

The data obtained from two of the nine participants participating in the study were analyzed together with an independent researcher to ensure reliability. A coding framework was created from the data obtained from two participants. The themes were carried out in different times and places and brought together to compare differences and similarities.

Findings

In this part of the study, qualitative and quantitative analysis results are included. The epistemological profiles of the participant prospective teachers were determined by making descriptive statistics of the results they received from EBSTL, and semi-structured interviews were conducted with the prospective teachers in three groups. The answers obtained from these interviews were analyzed through inductive content analysis, and continuous comparison methods, which are among the qualitative analysis approaches.

Findings Regarding Prospective Pre-School Teachers' Epistemological Beliefs About Learning

The results obtained from the scale applied to prospective preschool teachers were evaluated by the descriptive analysis method to determine the level of prospective preschool teachers' epistemological beliefs about learning. The findings are presented in Table 2.

Table 2. *Descriptive Statistics of Prospective Preschool Teachers' EBSTL Scores*

	N	Minimum	Maximum	$\bar{X}$	Standard Deviation
EBSTL Score	52	73	98	85,3	6,002

According to the descriptive statistical values given in Table 3, it was determined that the mean epistemological belief scores of prospective preschool teachers were $\bar{\mathbf{X}}$=85,3. It was determined that the minimum value for the total average scores was 73, and the maximum value was 98. These findings reveal that the epistemological beliefs of prospective preschool teachers participating in the research are higher than the average scale value of 69,00.

Findings Regarding the Pedagogical Views of Prospective Preschool Teachers on Teaching Philosophy with Children

Inductive content analysis was performed within the scope of the answers given in semi-structured interviews with preservice preschool teachers from the lower, middle, and upper epistemological belief profiles to determine their pedagogical views on philosophy teaching with children. The results evaluated how the epistemological profile differentiated the pedagogical views of teaching philosophy to children with the help of direct quotations and interpretations. The themes and concepts reached as a result of inductive content are given in Table 3.

Table 3. *Conceptualizations for Philosophy with Children*

Data Source	**Upper Epistemological Profile**		**Middle Epistemological Profile**		**Lower Epistemological Profile**	
	Theme	**Concept**	**Theme**	**Concept**	**Theme**	**Concept**
Purpose and Scope of Teaching Philosophy with Children	Instructional strategy	Integrated activities	Nature of pre-service education	Subject Field Knowledge No idea (-)	Science literacy (3)	Questioning Thinking Skills
	Science literacy	Thinking skills				
General Teaching Pedagogy	Child-centered strategies	Asking qualified questions Curiosity – Exploring Research-Inquiry Brainstorming	Child-centered strategies	Curiosity Asking qualified questions	Subject field knowledge (2)	Personal experience (-)
	Teaching strategy	Storytelling Concept Map	Associating with Life (2)	Objectification	Child-centered strategies	Questioning Curiosity
Teaching Orientation	Science literacy	Accessing the right	Associating with Life (3)	Daily life	The qualification	Field Information

		information			of the theoretical teaching	(-)
	Associating with Life	Academic life Daily life Effective Communication			Associating with Life	Effective Communication
Children's Understanding	Developmental level	Availability	Associating with Life	Objectification	Teacher's Role (3)	Role model-guide
	External Effects	Motivation (-) Communication difficulties Teacher	Teacher's Role	Role model-guide	Personal Orientations	Epistemological belief
Associating with the Curriculum	Gains and indicators	Cause-effect relationship Cognitive development area	Gains and indicators	Cause-effect relationship	The qualification of the theoretical teaching (3)	Field Information (-)
			The qualification of the theoretical teaching	Field Information (-)		
Teaching Strategies	Child-centered strategies	Group work Integrated activities	Epistemological beliefs	Rhetorical Orientation	Strategies for Scientific Thinking	Brainstorming Asking questions Discussion
	Strategies for Scientific Thinking	Problem Solving Brainstorming	Child-centered strategies	Research – Review Dramatization	Subject Field Knowledge	Appropriate concept teaching (-)
Assessment and evaluation methods	Science Process Skills	Observation Asking qualified questions	Science Process Skills	Asking qualified questions Questioning	Science Process Skills	Observation Questioning
	Child Centered Assessment	Portfolio	Integrated activities	Drama-improvisation		

Purpose and Scope of Philosophy with Children

The findings obtained as a result of inductive content analysis on the answers given by prospective preschool teachers within the framework of semi-structured interviews are given in Table 3. In this context, in the first question asked to the participants within the framework of the *purpose and scope of philosophy teaching with children*, prospective teachers with lower epistemological belief profiles stated that *they did not have sufficient knowledge about philosophy with children*. Participants from the middle and upper epistemological belief profiles focused on *science literacy* and *subject field knowledge*.

> **UEB-1: In** preschool education, we prioritize supporting children's reasoning and creative thinking skills, and one of our main goals in all our activities, such as science and mathematics, is to support thinking skills. Philosophy with children is a type of activity that should be done in this context.

> **MEB-1:** In fact, there are situations where we take advantage of philosophy without being aware of it. However, I only know a little. When I talk to my 5-year-old children about the events around us, I make use of my philosophical knowledge and transfer it to their level.

As seen in the sample quotations from the participants, prospective teachers stated they needed more knowledge. It is seen that their views on philosophy with children are shaped within the framework of *multi-dimensional thinking skills, reasoning, developing perspectives, and creative thinking, especially in prospective teachers with upper and* middle epistemological belief profiles.

General Teaching Pedagogy

In the answers given by the prospective preschool teachers to the second question about the *general teaching pedagogy of philosophy with children*, the participants representing the upper and middle epistemological profiles stated that *they could benefit from questioning strategies and using approaches that support their feelings of curiosity*.

> **UEB-1:** First, we need to know how to ask the right questions to the children. I do not have anything clear in my mind as a philosophy teacher, but I think it is important to ask open-ended and thought-provoking questions for all activities. We need to know how to ask thought-provoking questions that improve children's creativity rather than questions that involve yes-no answers.
>
> **MEB-3**: I could do this by asking open-ended questions that would make children think, both listening to each other's opinions and seeing each other from different perspectives.

As seen in the sample quotations, prospective preschool teachers with upper and middle epistemological belief profiles stated that they could use strategies to *support thinking* to teach philosophy to children in the classroom. In this context, they stated that they could employ activities that increase *their curiosity*, the *importance of asking open-ended questions,* and that they should be *associated with life*.

> **LEB-2:** I support their broad thinking and make them look from different windows. It is also a complex process for me, and I need to improve myself in this context, but in general, I support children to think broadly.

One of the prospective teachers in the lower epistemological belief profile stated that he/she should also improve his/her thinking skills by mentioning a weak aspect of his/her teaching philosophy to children in the classroom. The fact that the participant realizes the aspects in which he/she feels inadequate, states that he/she needs to improve himself/herself and sees that thinking skills are essential in philosophy with children shows that he/she can make self-criticism and gives importance to thinking skills in philosophy with children. It is seen that LEB-2 has *limitations* on the *subject field knowledge* within the scope of philosophy with children.

> **LEB-1:** I had just heard of philosophy in high school. Therefore, if we start this education for children starting from preschool, we will start earlier. I develop a sense of curiosity, teach questioning, and support consequences.

Another prospective teacher from the lower group stated that he/she lacked knowledge due to his/her late meeting with philosophy in his/her education life. In this context, it is seen that the quality of the education provided is

also important for teachers in the philosophy process with children. In general, although it is concluded that prospective teachers from the lower, middle, and upper epistemological belief profiles can use strategies to develop their sense of thinking and curiosity, it can be said that the main difference that distinguishes prospective teachers with upper and middle epistemological profiles from prospective teachers in the lower epistemological profile group is their *level of knowledge.*

Teaching Orientation

When the answers of prospective preschool teachers from the lower, middle, and upper profiles were examined regarding the third question asked within the scope of teaching philosophy with children, all of the prospective teachers in the upper epistemological belief profile stated that they could use philosophy with children *in all areas of their lives*. This shows that they focus on *associating with life*, which has an important place in the preschool period.

> **UEB-1:** In the preschool period, we aim to enable them to learn how to learn instead of teaching. I think that philosophy with children can also improve this. It can improve awareness of themselves and their environment and learning to learn something. I think this can help them in their educational life, academic life, and daily life to be able to analyze things and to reach the correct information.

When the sample quote given is examined, it is seen that the participants from the upper profile group stated that it is important for children to learn to access information rather than being directly exposed to information in the preschool period. This situation has shown us that it refers to us within the scope of *scientific literacy*.

> **MEB-3:** Since preschool education forms the foundations of children's future lives and school life, starting philosophy education in this period will be more effective and permanent.

> **LEB-2:** I met philosophy when I was in 12th grade. I had no knowledge about it before that. We face a more complex process when we start at a late age. For this reason, I think it is important for children to develop philosophy at an early age.

Regardless of their epistemological belief profiles, the prospective teachers in all two groups stated that giving philosophy education to children from an early age, as in the quotation given, contributes to their thinking skills in the process. At the same time, the answers given by the prospective teachers that teaching philosophy to children will positively affect children's daily lives, academic processes, and social interactions show that they agree on *associating philosophy with life* as a result of teaching philosophy to children.

Children's Understanding

The fourth question in the form was directed to the participants for their understanding of children in philosophy with children. Prospective teachers from the lower, middle, and upper epistemological belief profiles answered that the *teacher should be a role model in* the philosophy process with children.

> **UEB-1:** First, I think the teacher should be a guide.

> **LEB-1:** The teacher should be a role model. He/she should be curious to ask questions, be able to answer questions with students so that the student can ask questions, and not be afraid of the teacher. As a result of the fact that the teacher is strict, children may encounter difficulties such as hesitating to ask questions and being inquisitive.

As seen in the example quotes, the prospective teacher from each epistemological belief profile refers to the *role of the teacher* in teaching philosophy to children. In addition, UEB-1 states that children's *communication skills* also have an important place in teaching philosophy to children.

In addition, the prospective teacher, one of the low epistemological belief profiles, stated that *teacher attitudes* are a factor affecting the child's feelings of questioning and curiosity in the philosophy process with children.

> **UEB-3:** I think their readiness is critical. We can only teach some subjects at some ages. The teacher should already be aware of this. According to him/her, we can carry the philosophy through and realize it while playing games, chatting, and during different activities. The mood of the child can also cause difficulties from time to time.

A high-profile prospective teacher expressed the importance of children's readiness. This refers to the fact that children's *past experiences* and *prior knowledge* are among the points to be considered in the philosophy process with children. In addition, the teacher's *recognition of children* and the use of philosophy with children in all areas will provide support in associating them with daily life.

Associating it with the Curriculum

When the answers given to the questions of associating with the curriculum asked by prospective teachers from the lower, middle, and upper epistemological belief profiles are examined, it is seen that some of the participants in the lower and middle groups cannot make an association with the curriculum for teaching philosophy with children. It is concluded that two of the prospective teachers from the upper epistemological belief profile stated that learning outcomes for *cognitive skills* can be used in teaching philosophy to children.

> **UEB-2:** We need to do activities within the scope of establishing a cause-effect relationship, developing imagination, and using outcomes related to this.

When the sample quotes taken from the participants in the upper epistemological belief profile group are examined, it is seen that *curriculum outcomes* and *reasoning skills* are associated with each other. This context reveals that prospective teachers in the upper epistemological belief profile attach importance to *scientific processes and questioning skills.*

> **MEB-1:** There are outcomes and indicators as well, but I do not remember exactly. The curriculum study was done too long ago; it needs to be re-studied.

> **LEB-2:** I do not think it is sufficient. There could have been more extensive outcomes.

When the answers given by the prospective teachers from the lower and middle epistemological belief profiles are examined, it is seen that they experience

insufficiency within the scope of associating philosophy teaching with children with the preschool education curriculum.

Teaching Strategies

In line with the answers given by prospective teachers to the sixth question asked within the scope of teaching strategies related to philosophy teaching with children, it is seen that prospective teachers from all three groups can use *child-centered strategies*.

> **UEB-1:** I think group work can be effective. Group studies can be applied to enable them to express themselves better, and project studies or stem education can be applied to enable them to obtain information for themselves.

> **LEB-1:** Activities that develop curiosity and activities that support asking questions. I can have them look at the clouds and ask what they see. I can make them to interpret a picture.

When the sample quotes are examined, it is seen that the participant at the upper epistemological belief level says strategies that suggest that they acquire scientific process skills based on inquiry and problem solving within the scope of *teaching how to reach information.* It is concluded that lower and middle epistemological belief group participants use strategies that offer more *concrete experiences*. This shows that the participants indirectly refer to epistemological beliefs.

> **UEB-3:** Activities such as theater, drama, etc., can be used. Also, brainstorming can be used, and games can be developed to answer questions.

> **MEB-3:** We can design more useful activities with gamification methods, such as drama and theater. Ultimately, the given word can be discussed with questions such as where it came from and what it means.

In addition, it is seen from the upper and middle epistemological belief profile that prospective teachers say that they can include different teaching strategies used in preschool education in teaching philosophy with children. This

shows that prospective teachers from the upper and middle epistemological belief profiles tend to include *child-centered strategies* in the education program.

Assessment and Evaluation

In the seventh question within the scope of assessment and evaluation, which is the last question of OFTPC, the participant prospective teachers were asked what they could evaluate as a result of teaching philosophy with children. When the answers given were examined, the answer of *scientific process skills* were coded as the common response of all three epistemological belief groups.

> **UEB-1:** It can be a portfolio. I would have them evaluate their products. It can also be very important to make observations.

> **MEB-3**: It is aimed at measuring children's ability to have different perspectives, to put forward ideas, to think critically, and to question.

As seen in the sample quotations, the prospective teachers from the upper epistemological belief profile stated that they could use *child-centered methods* that are used as an evaluation method in preschool education, such as portfolios. In this context, it is seen that the participants from the upper epistemological belief profile can integrate preschool education and philosophy with children. At the same time, the fact that the prospective teachers from the upper epistemological belief profile mentioned the concept of *reaching information* shows that they give answers within the scope of *science literacy*. The fact that the participants from the middle and upper epistemological belief profiles mentioned high-level thinking skills shows that they refer to *scientific thinking processes*.

> **LEB-2:** I cannot think of assessment and evaluation tools exactly, but I do not know if they include broad thinking skills and philosophy, but I would aim to measure their ability to empathize.

In the response given by the participant representing the low epistemological belief profile, it is concluded that he/she experienced limitations in *subject field knowledge* and was faced with *conceptual confusion*.

LEB-3: I can measure how wide their thoughts and dreams are. I can observe their communication with their family and classroom.

UEB-3: I study their attitudes and game language when playing games. I generally make observations.

When the quotations from the prospective teachers from the upper and lower epistemological profiles are examined, it is seen that the levels of *transferring philosophy with children to their daily lives* will be considered among the evaluation methods as a result of the philosophy teaching process with children. In this context, for philosophy to be effective and permanent with children, they indirectly refer to the importance of associating it with life in the process.

Conclusion and Discussion

This study examined the effect of prospective pre-service preschool teachers' epistemological belief levels on their views on teaching philosophy with children. In the research conducted using the scale and interview, a mixed method was used to evaluate the qualitative and quantitative perspectives together. Fifty-two prospective preschool teachers who continue their undergraduate education participated in the research, and qualitative research was carried out with groups of three people included in three epistemological belief profiles within the scope of the scale results obtained from these pre-service teachers. The results obtained as a result of qualitative and quantitative data analysis are discussed below.

The result obtained from the first sub-problem of this study is that the prospective preschool teachers' epistemological belief levels were higher than the average score on the scale. When the result obtained is evaluated in the light of the relevant literature, Tanrıverdi (2012) stated that the prospective preschool teachers' epistemological belief levels and accurate information belief are less than those of other department students, Brownlee and Berthelsen (2006), who concluded that teacher beliefs are open to change, and Vorkapić (2012), who

concluded that pre-school teachers' epistemological belief scores are higher than average. In this context, the high epistemological belief scores of prospective preschool teachers may indicate that they tend to use different child-centered approaches and have positive attitudes towards reaching information and learning.

According to the results of OFTPC, prospective preschool teachers in the lower, middle, and upper groups, according to their epistemological belief profiles, referred to the *science literacy* mission for the purpose and scope of philosophy teaching with children. Philosophy education with children can be used to enable students to establish the cause-effect and part-whole relationship (meronymy) between the information they get and to develop their reasoning skills because philosophy with children is a pedagogy that enables the development and support of high-level thinking skills such as reasoning and critical thinking. At the same time, it supports children to be questioners and researchers instead of accepting what they see and experience without thinking, and to make judgments about what is right and wrong (Tunç 2017). In this context, the fact that the participant from each epistemological belief profile refers to *science literacy* meets the expectation in the current literature.

Another conclusion reached in this study is that the lower and middle epistemological belief groups felt insufficient in *subject field knowledge.* Haynes and Murris (2011) argue that teachers have concerns about philosophy due to their lack of knowledge about their educational background and the content and methods of philosophy. In this context, it can be thought that the participants whose epistemological beliefs are in the lower and middle groups tend to misprioritize philosophy teaching with children due to a lack of knowledge.

From the upper epistemological belief profile, it is seen that the participants refer to *teaching strategies* in addition to science literacy and state that they can use *child-centered strategies* more. Teachers' perceptions of teaching, their practices in the classroom, teaching strategies, and overall performance are

affected by teachers' epistemological beliefs (Cheng et al. 2009; Tanase & Wang 2010). While teachers with a high epistemological profile guide their students with a rich learning environment by including different methods and techniques in their classes; Teachers with a lower epistemological belief profile have a more strict and traditional teaching approach (Karhan 2007); cited in (Şahin & Başal 2021). In this context, child-centered strategies support the methods used in research on philosophy with children (e.g., Güven 2019; Karasu 2019). Including methods that will support prospective teachers' beliefs about the nature of knowledge and how learning is formed in the process of their undergraduate education will positively affect their education strategies in the classroom.

Another conclusion obtained as a result of the research is that participants from different belief profiles stated that the *role of teachers* is important in the period of philosophy with children. In philosophy with children, the teacher should be facilitative, ask appropriate questions, provide an environment where students can express themselves comfortably and clearly, and make use of spontaneous opportunities.

When the results are examined, it is directly proportionate to the literature that prospective teachers from all three epistemological profiles say that the process of philosophy with children can lead to positive changes in children's communication skills and their daily lives (e.g. Akkocaoğlu Çayır 2015; Demirtaş et al. 2018). As a result of the philosophy process with children, it is seen that there are positive changes such as positive effects on students' social behaviors (e.g., Moriyon, Magro, & Morilla 2014), support of creative thinking skills (e.g., Ghaedi et al. 2015), academic achievement (e.g., Säre, Luik, & Tulviste 2016), self-confidence (e.g., Gorard, Siddiqui, & See 2017). Similarly, changes in the way that children give examples in their dialogues explain why and how, and use long sentences are also among the effects of philosophy with children (e.g., Karadağ et al. 2018). At the same time, the fact that teachers with versatile epistemological belief profiles use the concept of association with life shows that they tend to use child-centered

approaches and support children's active participation in the learning process. In this context, it is consistent with the fact that the epistemological belief scores, which are the first findings obtained in the study, are above average.

Another result reached is that the prospective teachers from all three epistemological belief profiles express themselves to feel insufficient about curriculum integration. Haynes and Murris (2011) stated that teachers' inability to use philosophy with children is due to a lack of knowledge and being unfamiliar with the structure of philosophy with children. The fact that the participants' answers to the previous questions about they felt insufficient within the scope of the subject knowledge may be the main source of their inability to integrate preschool education curriculum and philosophy teaching with children.

Participants from all three epistemological belief profiles referred to *scientific process skills* within the scope of assessment and evaluation. In early childhood, it is known that children's performances of paying attention, reasoning, using logical argumentation, and distinguishing all their relationships with children through philosophy are positively affected (McCall 2013: 34-35). Assessment and evaluation in preschool education should be aimed at the child's benefit and should be integrated into plans and learning opportunities (MoNE 2013). The fact that the participants from the upper epistemological profile stated that they could use child-centered assessment methods in addition to their scientific process skills shows that they make reasoning more consciously within the scope of their knowledge structure, although they feel insufficient in terms of subject knowledge and associating with the curriculum.

Recommendations

In this part of the research, suggestions are given within the framework of the results obtained.

1. Research can be conducted with preschool teachers in such a way that the context of the research remains the same. The differences between preschool teachers and prospective preschool teachers can be compared.

2. Studies can be conducted on the processes of teachers from different epistemological belief profiles to apply philosophy teaching to children.
3. Studies can be carried out to check the relevancy of the changes that occur in children during philosophy teaching with children with the goals aimed.
4. During pre-service education, preservice pre-school teachers can be provided with training such as thinking skills, research, questioning comprehensive courses, and philosophy with children. In this context, teachers will be supported to meaningfully integrate philosophy into the curriculum.

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