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Practices in a forest kindergarten: a case study

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Abstract

Forest kindergartens are an alternative early childhood education model in which most educational processes occur outdoors. This study examines the practices of forest kindergarten over an academic year in terms of curriculum, educational processes, stakeholder relationships, and assessment dimensions. The research was conducted as an instrumental case study, a qualitative research design, at a forest kindergarten in Hamburg, Germany. Two teachers and six parents participated in the study. Data were collected through interviews, participant observation, documents such as the curriculum used in the forest kindergarten, daily and weekly lesson plans, project outputs, and photographs. The data were analyzed in two stages using the MAXQDA Analytics Pro 2022 software. The study yielded various findings related to the aforementioned dimensions. Firstly, it was found that the curriculum was implemented in forest and open-air settings and included regularly scheduled annual activities. An examination of the educational process revealed that routine activities and projects were emphasized in daily routines and weekly schedules. Secondly, family involvement and collaboration with stakeholders were found to be important components of the forest kindergarten program. Finally, it was concluded that portfolios, annual assessments, and school readiness assessments were used for evaluation in the forest kindergarten.

Keywords

Early childhood education
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Introduction

Forest kindergartens are recognized as an alternative model in early childhood education, originated in the 1960s in Scandinavian countries and later spread throughout Europe (Schäffer & Kistemann, 2012; Sobel, 2015). This approach is rooted in the ideas of influential thinkers such as Froebel, McMillan, and Isaacs, who regarded nature as the ideal learning environment (Cree & Robb, 2021). The philosophy of nature-based education emphasizes that children are innately connected to nature and should remain in interaction with it, viewing the child not as separate from nature but as part of it. It embraces the idea that "the child is nature," focusing on a holistic and naturalistic approach (Cutter-Mackenzie-Knowles et al., 2019; Eroğlu, 2022; Waite et al., 2015). Forest kindergartens aim to connect children with nature by offering developmentally oriented educational programs in outdoor learning environments (Larimore, 2016). It can be argued that the experiences children gain in their educational journey are closely linked to the educational philosophy adopted by the early childhood

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institution they attend. In line with the adopted educational philosophy, it can be expected that core elements such as the curriculum, educational processes, teaching methods, stakeholder relationships, and assessment in forest kindergartens differ from those in other educational approaches.

The *curriculum*, as the most fundamental component of education, must be structured and function to support all areas of the learner's development and stimulate their motivation to explore and investigate (Kostelnik et al., 2019). Therefore, when the learners are young children, it is essential that the curriculum be child-centered and developmentally appropriate. Forest kindergarten curricula are designed to support children's experiential learning, emphasize exploration, and are grounded in a place-based learning approach (MacEachren, 2013). At the same time, they are guided by a play-based educational philosophy. According to Knight (2013), additional essential characteristics of forest kindergartens comprise of unconventional learning environments, a reasonable level of safety, a system developed over time, qualified educators, daily rituals for starting and ending the day and educational activities, and the necessity of child-led learning processes. Together, these features establish the intended learning environment in forest kindergartens and influence the overall educational process.

The *educational process* serves as the means through which the curriculum is implemented for children. The educational process entails selecting methods, techniques, and activities tailored to achieving the curriculum's specified learning outcomes (Akyol, 2020). In forest kindergartens, education takes place outdoors for 70% to 100% of the day, except for extreme weather conditions. Activities must be initiated and led by the children themselves (Knight, 2013; Larimore, 2016; Sobel, 2015). Decisions regarding the educational process as well are made in collaboration with children and families (Amus, 2022). Through nature-based activities, children are offered opportunities to explore the forest environment using all their senses, gain in-depth knowledge about wildlife, and engage in various discovery experiences (Cree & Robb, 2021).

Another key component in education is the *relationship* between the family, teacher, and child. In early childhood education, the impact of these relationships on learning is a widely accepted reality across most educational approaches (Bronfenbrenner, 1992; Sucuoğlu & Bakkaloğlu, 2018). These relationships must be respectful, accepting, open, inclusive, and tolerant (Göle & Temel, 2015). Trust-based relationships between teachers, families, and children play a significant role in the education process in forest kindergartens. Teachers trust that children will follow forest rules, while children also trust their teachers (Knight, 2013). To support the child in all developmental areas, interactive, collaborative, and strong communication between teachers and parents is prioritized (Murphy, 2020). Interactive social relationships are reinforced through family involvement activities, establishing a strong connection between school and home (Cohen & Anders, 2019; Toran & Özgen, 2018). In forest kindergartens, parents may take part in organizing the learning environment or provide support for various activities (Amus, 2013). Partnerships with families are formed in various ways, such as participating in school activities and exchanging information about the child. Considering the characteristics of forest kindergartens, children are expected to play an active role in various dimensions of information sharing, including assessments. At the same time, collaboration between teachers and families is also expected.

The final component of education, *assessment*, according to McAfee and Leong (2020), is beneficial in identifying children's needs, planning an appropriate educational process, and strengthening collaboration with families. Although the assessment dimension varies depending on the official preschool curriculum of the country in which the school is located, in forest kindergartens, teachers are expected to observe children and provide support when needed (Cree & Robb, 2021). It has been found that in these early childhood education centers, children not only achieve the outcomes outlined in the preschool curriculum but often exceed them (Cornell Card, 2014). Considering how assessment is carried out in the unconventional learning environment of forest kindergartens, Boyer (2020) noted, based on his observations, that learning is documented through photographs. However, it has been observed that there is limited research in the literature regarding assessment methods in forest kindergartens.

Many studies examine the quality of preschool education and explain its components (Canbeldek & Işıkoğlu Erdoğan, 2016; McLachlan et al., 2018; Sabol & Pianta, 2012; Toran & Özgen, 2018). Forest kindergartens, which have different characteristics from traditional kindergartens, are expected to exhibit differences in educational components. In the literature, some studies address some of these components from the perspective of forest kindergartens. For example, while Kane and Kane (2011) and Kimic and Kundziewicz (2020) focused on the educational process, Sobel (2015) further discussed the curriculum. This study will identify the entire range of educational practices carried out in a forest kindergarten from the beginning to the end of a school year, determining how educational components are addressed in these schools. This is anticipated to enable educators and researchers in preschool education to view the topic holistically. The holistic perspective is expected to assist in making informed decisions regarding practices. Furthermore, it can be said that the research findings will help raise quality awareness among preschool educators in Turkey and will enrich the Turkish literature on nature-based education. In this context, the study aims to examine the practices of a forest kindergarten over a school year with a focus on the components of preschool education. To this end, the following questions have been addressed:

1. What are the characteristics of the curriculum implemented throughout the year in the forest kindergarten?
2. In what way is the daily educational process structured in the forest kindergarten?
3. In what manner do families participate in the educational process in the forest kindergarten?
4. What are the nature of the stakeholder relationships in the forest kindergarten?
5. What is the nature of the assessment dimension in the forest kindergarten?

Method

Research Design

This research is a qualitative study conducted as an instrumental case study. Case studies are a qualitative research approach in which the researcher examines one or several bounded cases in depth over time through multiple data sources such as observations, interviews, visual and audio-visual materials, documents, and reports, where cases and case-related themes are identified (Creswell, 2020). In instrumental case studies, the examined case is not the purpose but a tool. The main objective is to obtain detailed information about the research questions and develop an understanding of the research topic (Stake, 1995). In this research, the instrumental case study design was selected because the purpose is to gain in-depth knowledge about forest kindergartens by examining the selected kindergarten.

Participants

In this study, purposeful sampling was used to select the sample. According to Merriam (2018), sampling in case studies involves two stages. First, the case to be studied is identified. In this research, the case is forest kindergartens. In the second stage, a sample from this case must be selected. At this stage, the criteria Stake (1995) defined for instrumental case studies were considered. According to these criteria, the sample should be chosen based on its potential to help better understand the phenomenon in line with the research purpose, and it should also be accessible. This study was conducted at the forest kindergarten where one of the researchers worked in Hamburg for six months during the academic year of 2021-2022. Germany was chosen as the site of the study as it has a long-standing tradition of forest kindergartens and is considered one of the leading countries in this area (Bundesverband der Natur- und Waldkindergärten, 2021; Häfner, 2003).

The forest kindergarten where the study was conducted operates under a nature-based preschool. Image 1 shows the cabin used as the meeting point for the forest kindergarten. This small, single-room structure is located right at the entrance of a large forest and is used exclusively by the class involved in the study. Inside the cabin, there is a toilet and a small kitchen. Parents take their children to this cabin four mornings a week. On one day each week, the meeting point is a different facility

belonging to the same nature-based preschool, located approximately 2 kilometers away, where other classes are also present.

Image 1. Forest Kindergarten Cabin

The forest kindergarten selected for this study includes 21 children aged between 3 and 6 years and two teachers. The study included two teachers and six parents who voluntarily agreed to participate. One of the teachers is a 39-year-old male, while the other is a 37-year-old female. Both teachers have eight years of experience working in a forest kindergarten. In addition to their formal education, they reported attending trainings related to forest pedagogy. The parents are between the ages of 35 to 41, all are female, and hold at least a bachelor's degree. Participants were coded using the letters "T" for teachers and "P" for parents, followed by a participant number.

Data Collection Tools

In this study, the primary data collection tools identified by Marshall and Rossman (2016) —in-depth interviews, participant observation, documents, and photographs—were employed. Observations were documented using the "Daily Educational Activities Observation Form" developed for the study. The interview questions were prepared in English and reviewed by experts. The interview forms, designed to understand the functioning of the forest kindergarten, were examined by two experts—one with a doctoral degree in early childhood education and one in the English language. Based on their feedback, revisions were made to improve the clarity of the questions and ensure comprehensive coverage of the subject. The parent interview form consists of 13 questions, while the teacher interview form consists of 10. Example questions from the parent interview form contain: "*What is your role as a parent during the kindergarten adaptation process?", "Do you regularly receive information about what happens in the kindergarten?"* and *"Do you participate in kindergarten and/or class-related decisions as a parent?"* The teacher interview form includes questions such as: *"Can you describe the orientation procedures?", "Could you walk me through a typical school day?"* and *"How is children's development and learning assessed in the forest kindergarten?"*.

Photographs were used to obtain visual evidence in line with the research questions. Additionally, existing official documents used at the kindergarten were incorporated. These documents were the kindergarten's brochures, project outputs, the school's annual activity program, photo archives, parent communication forms, assessment tests, the preschool education curriculum "Hamburger Bildungsleitlinien Kita" (Behörde für Soziales, Familie, Gesundheit und Verbraucherschutz, 2012a), and the state education regulations for governing the operation of all

kindergartens, including forest kindergartens "Richtlinien für den Betrieb von Kindertageseinrichtungen" (Behörde für Soziales, Familie, Gesundheit und Verbraucherschutz, 2012b). Some of these documents were obtained from the administration office, while others were sourced from the official websites of relevant ministries or state authorities. Finally, anecdotal records were kept in a "Researcher's Notebook" throughout the study.

Data Collection Process

Before starting the data collection process, ethical committee approval for the research, permission from the school administration, and consent from participants via an English-language consent forms were obtained. The form provided detailed information about the research and measures taken to protect privacy. The data for the research were collected over 3 weeks, including 2 weeks of observation. The process began with observation. The forest kindergarten included in the study provides 6 hours of daily education. Observations were conducted to examine the daily educational activities that lasted for 10 days, with 6 hours each day totaling 60 hours. The observations were conducted every day of the week to determine whether routine activities were held on different days of the week over the two-week period. After the observation period, interviews were conducted within one week. With the participants' consent, the interviews were audio-recorded and lasted an average of 20 minutes. After gathering the responses, short follow-up interviews were held with some participants to clarify any unclear or incomplete aspects. During this process, the necessary documents for the research were also obtained, and various photographic evidence was collected in line with the research questions.

Data Analysis

In this research, data analysis was conducted in two stages—first and second cycle coding—using the MAXQDA Analytics Pro 2022 software. In the first cycle coding, holistic coding was made to divide the data into broad topics in light of the literature, followed by provisional coding, which is also a first cycle coding method, to provide further detail. In the second cycle, axial coding was employed. Axial coding aims to organize the data, which has been divided and fragmented, around the categories that emerged during the first coding cycle (Saldana, 2022). Following this process, the findings were grouped under five themes: Curriculum, educational process, family involvement, interaction with stakeholders, and assessment.

Validity and Reliability

In this qualitative study, validity and reliability measures were considered based on the criteria specified by experts (Yıldırım & Şimşek, 2018; Yin, 2018). Firstly, during the planning phase of the research, data collection tools were determined by using multiple sources of evidence. Data were collected using multiple tools to ensure validity, including interviews, observations, photographs, and documents. The participants and the educational institution involved in the study were selected through purposive sampling as a validity measure, as they were considered the group most likely to provide the best answers to the research questions.

During the data collection phase, the method of prolonged engagement was taken into account, and data were collected over three weeks, including ten days of observation. Additionally, as an employee of the kindergarten, the first author had established a certain level of relationship with all participants and spent an extended period in the field prior to the research. Since the data obtained from the interviews were collected in English, to prevent misunderstandings, the conversations were summarized after data collection and presented to the participants for their approval, and participant confirmation was obtained. Throughout the research process, expert review was utilized at various stages, such as developing data collection tools and naming specific codes and categories. In reporting the research, the method of detailed description was considered by including direct quotations.

Results

In this study, the forest kindergarten was examined over the course of one year, focusing on the components of preschool education. The findings are presented under five themes, as shown in Figure 1.

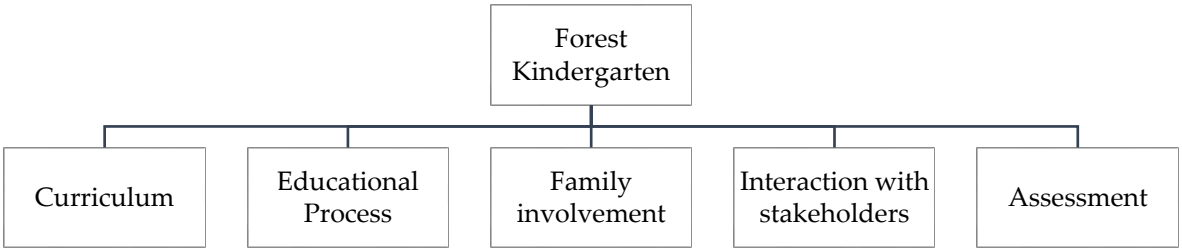

Figure 1. Hierarchical code-subcode model of the themes

1. Curriculum

According to the data obtained from documents and interviews, both traditional kindergartens and the forest kindergarten are required to implement the play- and project-based preschool education curriculum of the state of Hamburg. The curriculum comprises of learning outcomes from areas such as language, culture, social environment, health, physical development, mathematics, music, nature, art, and technology. However, since this research aims to reveal the specialized education and curriculum implemented in forest kindergartens, the state curriculum was not examined in detail.

Within this scope, the curriculum theme consists of two categories: Orientation and annual routine activities. The first category covers the details of the orientation process that initiates the academic year for the child. Subsequently, the routine activities implemented throughout the year in the kindergarten are addressed.

1.1. Orientation

The educational process for children begins with orientation. The subcategories of the orientation category are protocol, adaptation meeting, and responsibilities (see Figure 2).

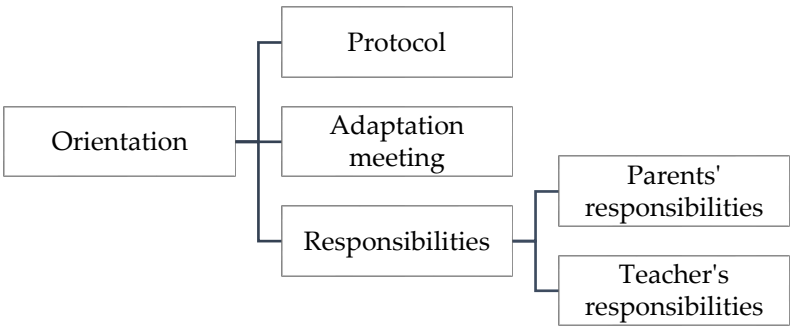

Figure 2. Hierarchical code-subcode model of Orientation

Protocol

Each family is given an appointment in a different week during the adaptation process. In this way, the attention given to the child during the adaptation process is not divided. There are two teachers in the classroom at the forest kindergarten, and one of these teachers is responsible for each child who begins the adaptation process. T2 summarizes the protocol related to the process as follows:

> *"The Berlin Model is used. The adaptation process is individually planned for each child and one parent. It basically lasts one week, and each day, the time spent is gradually extended until the child stays with the group for the entire day on their own. Under normal circumstances, the adaptation process is completed within two weeks."*

According to the school's information brochure, the Berlin Model consists of five stages. During the first three days, the child is accompanied by a parent. The first brief separation attempt takes place on the fourth day. The duration of separation is gradually extended over time. In the final stage, the parent can leave the child at school for the entire day, and the adaptation process is considered complete. T1 stated, "Sometimes a change of parent, a break, or an additional week is necessary. Due to the weather, we start the adaptation process between March and October…" indicating that orientation in the forest kindergarten is conducted between spring and autumn and that adjustments can be made according to the needs of the child.

Adaptation meeting

After the adaptation week, a meeting is held with the child's parents. P5 described this meeting as follows: *"…We had a parent-teacher meeting where we discussed with the educators how the adaptation process went and how they had evaluated our son up to that point."* There is a form used during the meeting, which contains questions about the adaptation process and the child's previous experiences.

Responsibilities

The final subcategory related to orientation is responsibilities. Interview and observation data revealed that parents and teachers have various responsibilities and roles during this process. The roles of parents include preparing the child, being present in the environment, providing reassurance, and answering the teachers' questions. Parents talk to the child before the adaptation process begins and explain what to expect. In the first days of the process, families are required to accompany the children but remain in the background without actively participating. The following is a quotation from the researcher's notebook related to the code of being present in the environment:

> *"Today was also an orientation day for a child. The mother was at the school all day but stayed 2-3 meters away from the children. The child joined the morning circle with the group and then participated in the playtime in the forest."*

P1 emphasized that another parent's responsibility is to provide reassurance to the child, stating, "*In fact, I can say that my main task was to give the child a sense of security simply by being there.*" Finally, during this process, parents are also expected to answer the teachers' questions about the child, which are aimed at getting to know the child better.

The responsibilities of teachers during orientation involved preparing the parents, creating a safe environment, providing reassurance, building a bond with the child, adapting to the child's rhythm, teaching the rules, facilitating communication with peers, and enabling parents to experience the process. T1 listed the actions taken to prepare parents and pointed out an aspect of the orientation process that they consider important:

> *"Before the child starts on the first day, we inform the parents and offer advice. We provide brochures and sometimes have a final phone call to answer any last questions... Most importantly, we create a safe and consistent environment."*

Participant P6 emphasized that the role of teachers in this process is vital and that stakeholders must trust each other, stating: "This is very important! There must be trust in teachers from both sides, that is, from the child and the parents." Examination of the interview data revealed that teachers use the adaptation process to build a bond with the child and expect the child to set the pace during this process. P1 highlighted this by stating: "…According to our experience, it is better if educators do not approach the child too actively but instead allow the child to set the pace when communicating." Another responsibility of teachers during the adaptation process is teaching the forest kindergarten rules to the child and facilitating the child's interaction with other children in the class. The final code, enabling parents to experience the process, was expressed by P5 as follows:

> *"Parents are also allowed to experience most aspects of daily life during this adaptation period so that they can gain a good perspective on the activities, risks, people, and environments with which the children are in daily contact."*

1.2. Annual routine activities

The annual activities routinely conducted in the forest kindergarten have been identified. These activities can be seen in Figure 3.

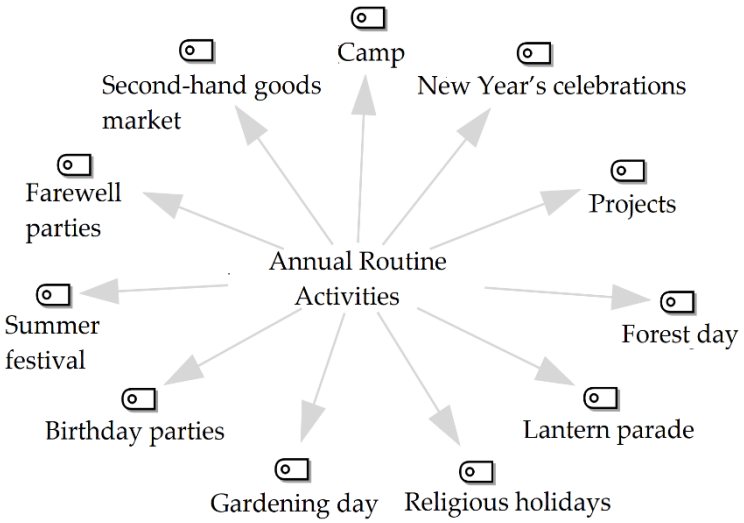

Figure 3. Code-subcode model for Annual Routine Activities

Projects are at the forefront of routine activities. Projects begin with a poster followed by various activities. For each project, a folder is created to store evidence related to the activities and activity plans. Projects are divided into class projects and school projects. School projects are carried out with the participation of the entire school, and the teachers at the school determine the topic. When examining the school's annual program, it is observed that a school project is conducted once every year. Teacher T1 explained how decisions regarding class projects are made as follows: "*We collect the children's ideas and write them down, and then we vote on these ideas*." It was also observed that teachers and children make joint decisions in cooperation when planning the activities to be carried out within the project's scope. Additionally, T1 shared details about the most recent project:

> *"Most recently, we carried out a construction project. Within this project's scope, we engaged in activities such as building tents, making houses and feeding stations for birds, and constructing a play kitchen. In addition, we created a temporary learning center and placed construction toys and books in this center."*

The construction project conducted during the observation period was decided together with the children and teachers during a morning circle. It was discussed that, if possible, children could bring books, toys, or tools related to the topic from home. One day after the project was decided, a poster was prepared using crayons, parents were informed, and support was obtained from the school administration to provide materials. Some of the materials used in the project can be seen in Images 2 and 3.

Image 2. Tools brought for the project

Image 3. Books and other materials

The construction activities continued in two dimensions, as shown in Image 4, and then in three dimensions, as shown in Image 5. The teachers decided some of the activities to be carried out within the scope of the project, while others were decided by the children.

Image 4. Two-dimensional building activity

Image 5. Three-dimensional building activity

The project lasted for two weeks, during which time a variety of activities were carried out, such as cutting branches in the garden using a saw, building structures with the branches, taking a field trip to a nearby construction site, learning new songs, and conducting various mathematics activities by examining buildings of different heights. Moreover, the play kitchen area shown in Image 6 was constructed and placed in the garden of the forest cabin with the participation of two parents.

Image 6. The play kitchen created within the scope of the project

Other routine activities include birthday parties, farewell parties for graduating children, New Year's celebrations, and religious holidays. Preparations for one of the religious holidays can be seen in Image 7. There are also routine activities that involve family participation. These activities are forest day, gardening day, camping, summer festival, lantern parade, and second-hand goods market.

Image 7. Decorations made outside the cabin for the Christmas party

2. Educational Process

The educational process consists of two subcategories: daily routine and weekly schedule.

2.1. Daily routine

The school provides education for approximately 6 hours a day, between 8:00 and 13:00 or between 8:00 and 14:00. Table 1 shows the general outline of the daily educational routine.

Table 1. Daily Routine

Activity	**Approximate timeline**
Drop-off time	08.00
Morning circle	08.30- 09.30
Breakfast and walk	
Free play	09.45
Return from the forest	11.30
Lunch	12.00
Free play around the cabin	12.30
Pick-up time	13.00 or 14.00

Except for Thursdays, each day begins at the cabin at the forest entrance. Details regarding the activities carried out upon arrival at school, as recorded in the observation forms, are as follows:

> *"T1 and the intern arrived at the cabin before eight o'clock. The first child arrived around 8:15. Until then, T1 checked the area and began preparations. He turned on the lights. The intern swept the area in front of the cabin. T1 brought the sitting cushions outside to the front of the cabin and took out the attendance list. The teacher greeted the child and the family when the first child arrived. The children continued to arrive one by one, and as they arrived, T1 marked the attendance list. The children who arrived went to play at the back of the cabin."*

After all the children arrive, around 9:00, the teacher rings a bell and calls the children to the front of the cabin for the morning circle, which serves as a starting ritual. The circle area is shown in Image 7. The activities in the circle are the same every day. The morning circle starts with a conversation, feelings are discussed, then one of the children counts the number of present children as a simple math exercise, and a song chosen by the children is sung. The place to be visited in the forest that day is determined by a vote in which teachers and children participate, and the circle ends. In the group, everyone, including the teachers, has one vote. The observation forms include an anecdote about the process of determining the place to visit:

> *"…The teacher asked, 'Where shall we play today?' She selected three children who raised their hands, and three different ideas were suggested. A separate vote was held for each of these three places. The results were 5, 7, and 12. They discussed which number was greater, and the option that received 12 votes won. In this way, the circle ended."*

In the daily routine, breakfast and a walk to the designated area take place after the circle. During the observations, breakfast was held in front of the cabin, which served as the meeting point on two occasions, while on the remaining days, the group went to the selected area with their lunchboxes and had breakfast there. All areas designated for play in the forest are approximately 15-20 minutes away from the cabin. After breakfast, free play time begins. An image taken during free play time in one of the areas visited in the forest can be seen in Image 8.

Image 8. Free play time in the forest

No planned educational activities are conducted during free play time in the forest. During the observation period, except for one day when cutting tools (such as peelers, knives, and protective gloves) were brought at the children's request, no materials were taken to the forest on other days. However, it was observed that teachers initiated various play activities or created play areas using materials found in the environment. For example, on one observation day, one of the teachers organized a mushroom-hunting activity with a few interested children; this activity emerged because a mushroom was found in the area. Similarly, the tent shown in Image 8 was built by the teacher and children using branches found in the surroundings on another day. According to the observations, children spent most of their free play time in the forest, engaging in risky play such as jumping, climbing, and running, as well as pretend play or exploring the area. During this process, it was observed that some of the games were construction-themed and influenced by the ongoing project.

On one of the observed days, the children wanted to spend the entire day around the cabin at the forest's entrance. In this case, they went for a walk in the forest and then returned to the cabin. An image taken during this walk can be seen in Image 9.

Image 9. A morning walk

Return from the forest takes place around 11:30 for lunch preparations. At noon, lunch is delivered from the affiliated nature-based kindergarten. Lunch is free of charge. After lunch, there is another playtime. During the observations, on four days, teachers conducted small group activities around the cabin during playtime. T2 stated, "*If there is an ongoing project or a special celebration, related activities are also carried out during the day*." According to the observation records, the small group activities conducted during this period were related to the newly started project. On other days, this period was spent in free play. Additionally, on one observation day, a child and a teacher carried out an individual activity inside the cabin in a quiet environment. This activity was aimed at assessing the child. This topic is explained in more detail in the assessment section. An image taken during playtime around the cabin can be seen in Image 10.

Image 10. Free play time around the cabin

Parents come to pick up their children between 13:00 and 14:00. While some children attend school for only 5 hours a day, for those who stay for 6 hours, the school day ends at 14:00. The daily routine of the four days spent in the forest at the forest kindergarten is as described above. However, for example, there are differences in this routine for children near the age to start primary school. On Tuesdays, these children enter the cabin and participate in the "bridge year" lessons, which are explained in detail in the next section, for one hour. The routine for Thursdays, when the children do not meet in the forest, is described in the next section as the day spent in the kindergarten building.

2.2. Weekly schedule

The weekly schedule comprises codes of the day at the kindergarten, yoga classes, field trips, and bridge year lessons. Most of the activities listed in the weekly schedule take place on Thursdays, designated as the kindergarten day. An annual fee of €50 is charged to families to cover all in-school activities and organizational adjustments within this subcategory, including yoga classes and field trips. However, parents with low incomes are not expected to make this payment. Bridge year lessons are offered free of charge.

The weekly schedule includes biweekly yoga sessions attended by the entire class. Additionally, a visit was made to a nearby construction site as part of an ongoing project observed during the study. Teacher T1 provided an explanation regarding the field trips in general as well as those conducted recently:

> *" For field trips to places such as museums and theaters, it is necessary to purchase tickets, inform parents, and notify both the kitchen and the kindergarten administration. Additionally, the public transportation schedule must be checked in advance. The field trips I recall include: A winter theater performance, children's gardens, an open-air museum village, the Elbe River, a fire station, and the public library…"*

Aside from additional activities such as yoga classes, field trips, and bridge year lessons, the daily routine at the kindergarten building follows a similar sequence to the one in the forest, primarily consisting of free outdoor play. A key difference is that there are no walks in the forest, and the time for free outdoor play is spent in the kindergarten's garden (Image 11). Children only go inside the building to have lunch, meet other needs, or participate in supplementary programs such as yoga.

Image 11. The kindergarten's backyard

According to the information brochure provided to parents at the school in Hamburg, when children turn 5 years old, families must make a decision. The child may attend a kindergarten class affiliated with a primary school one year before starting school or continue attending their current

kindergarten and participate in the primary school preparation classes. This year, when the child transitions from kindergarten to primary school, is called the bridge year. T2 explains the bridge year as *"The year in which the child participates in preschool lessons at kindergarten. These lessons are held on Tuesdays and Thursdays."* The study group consists of a mixed-age class of children aged 3 to 6. While the daily routine for the other children in the group continues as usual, the five older children participate in the bridge year lessons. When examining the weekly schedule for the bridge year, it can be seen that Tuesday mornings are dedicated to preschool lessons focusing on areas such as language and mathematics or field trips explicitly planned for this group of children. Thursday mornings are for music lessons, while Thursday afternoons are again allocated for preschool lessons. The bridge year lessons are conducted by a teacher different from the class teachers, and this teacher comes to the cabin on Tuesdays. Since the entire class is at the kindergarten building on Thursdays, the five children go to a classroom for their activities. Image 12 shows a letter activity conducted as part of the literacy preparation in the bridge year lessons.

Image 12. A letter knowledge activity conducted as part of the bridge year activities

According to the observations, when examining the curriculum and educational process implemented in the forest kindergarten, it can be said that the education is child-led, but that is not all. T2 emphasized this by stating, *"...The teacher and child are equal stakeholders and members of the group*." Therefore, in some situations and decisions, the children take the lead, while in others, leadership is shared by the adult or the entire group consisting of both children and adults. The other important stakeholder in children's education, the family, is discussed in the following section.

3. Family Involvement

The theme of family involvement is divided into three subcategories, which are support for activities, family participation in routine activities, and communication, as shown in Figure 4. Communication is examined in two groups: communication with teachers and communication with management.

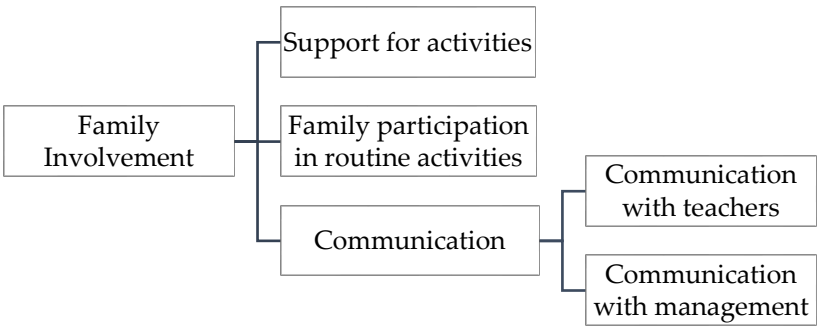

Figure 4. Hierarchical code-subcode model of Family Involvement

3.1. Support for activities

The findings show that families provided various forms of support for the activities organized at the school. This support included sending materials to the school, contributing to the planning of routine activities during parent meetings, and helping with preparations for special celebrations. For example, participant P4 stated they contributed to *"…preparing an Advent calendar for the whole group"*.

3.2. Family participation in routine activities

The annual routine activities previously mentioned—such as Gardening Day, Forest Day, camp, summer festival, lantern parade, second-hand market, and project presentations—are all events with family participation each year. Gardening Day refers to planting activities held twice a year, in autumn and spring. Forest Day was described by P5 as *"…Forest Day includes activities such as jointly repairing the outdoor play area around the cabin and constructing new play spaces*." During the observed project period, it was noted that two parents came to the forest to support the activities by building a kitchen area with the children. On Forest Day, children also show their favorite places in the forest to their families and engage in forest clean-up activities together. The dates and times of these routine events are shared with parents annually through an information letter distributed by the kindergarten.

3.3. Communication

An analysis of the data obtained from interviews, documents, and observations reveals that families maintain regular communication with both teachers and the school management.

Communication with teachers

Communication with teachers takes place through both direct and indirect means. Teachers can be contacted directly during drop-off and pick-up times, in individual meetings, at parent meetings, and via the classroom phone, which is available between 8:00 a.m. and 2:00 p.m. Participant P2 stated that they found the conversations during drop-off and pick-up times to be helpful:

> *"Conversations with educators at the door are possible during drop-off and pick-up times. This provides a valuable opportunity, as small matters can be briefly discussed without the need to schedule a formal meeting."*

Participant P3 elaborated on the parent meetings as follows: "Twice a year, there are meetings referred to as 'parent evenings.' All parents are invited to the kindergarten in the evening to receive updates, overviews, and general information about the class, activities, and projects."

Indirect ways of obtaining information about children involve the bulletin board and message board located in the cabin, the notification board displayed when a child is ill, and occasional notes posted at the entrance of the cabin. The illness notification board is used to inform parents when a contagious illness has been identified, serving as a reminder to watch for symptoms. Following privacy guidelines, the name of the sick child is not disclosed; only the name of the illness and the date the child last attended school are provided. Participant P2 explained the function of the message board, shown in Image 13, by stating: "*I can get information about what the group did that day from the board in the forest*

cabin. For example, one or two sentences are written, such as 'Today we were at the old stump's place and later played at the cabin".

Image 13. The message board located on the exterior wall of the cabin (English: *Today, we went on a long walk in a rainy forest and made a project poster*.)

Finally, the parents have a group on an instant messaging app. Although the teachers are not part of this group, parents and parent representatives share any important information they may have received during the day, allowing families of children who were absent to stay informed indirectly.

Communication with management

Communication with the management occurs both directly and indirectly. Parent representative meetings, postal mail, and emails are direct communication channels. Indirect information from the management can also be obtained through various brochures, such as the school introduction brochure, annual plan brochure, and bridge year brochure, which are provided before the child's orientation day. Participant P5, one of the class representatives, provides information about the representative meetings they attended:

> *"…When there is a parent council meeting, we exchange ideas with parent representatives from other groups and the management. These meetings occur approximately every two months. Example topics include: how the kindergarten allocates its funds, and what types of activities parents can organize to raise money and provide better financial support to the kindergarten. For instance, events like a second-hand goods market."*

Another parent representative, P1, stated that topics such as "…*job openings, available vacancies, and interns*…" are also discussed at these meetings.

4. Interaction with Stakeholders

This theme examines interactions in four categories: teacher-child, family-teacher, family-management, and teacher-management.

4.1. Teacher-child relationship

When the data obtained from the observation forms were analyzed, it was observed that teachers frequently conversed with the children throughout the day, occasionally joined in their games, or initiated play with them, and that the children trusted the teachers. When children encountered a problem they cannot solve, they turned to the teachers for help. The researcher's field notes contain an anecdote related to this category.:

> *"The communication between teachers and children here differs from what I am accustomed to. In Turkey, it is common to see teachers hugging children, but I have not observed random displays of affection here. Sometimes, for example, when younger children fall, teachers respond to their need for a hug, but other than that, I have rarely seen such behavior. From a distance, I often see small, fun conversations happening between the teachers and children. However, the children generally focus on their own play, with teachers remaining in the background."*

4.2. Family-teacher relationship

When the data were analyzed, it was observed that there was a respectful and sincere relationship between the families and the teachers. Parents trust and support the teachers, and their communication channels always remain open. Since the class consists of children of mixed ages, a child who starts kindergarten at the age of 3 spends several years in the same class with the same teachers. This continuity positively affects communication with parents and fosters a friendly atmosphere. Parent participant P3 expressed this as follows: "*If there is something I want to talk about, such as a behavioral change or a similar concern, I can easily talk to the teachers about my concerns."*

4.3. Family-kindergarten administration relationship

When analyzing the theme of interactions with stakeholders, it was observed that the kindergarten administrators also play a significant role in education and maintain intense communication with families. In the interviews, parents emphasized that they are in regular communication with the administrators. Parents first encounter the administrator during enrollment and continue to communicate throughout the school year. This relationship is particularly strengthened through parent representative meetings. When the interview data were examined, it was found that there is a respectful and open relationship, and parents trust the kindergarten administration and the decisions they make. P3 elaborated on this relationship: "Communication with the administration office is generally excellent. The principal knows us by name, and despite the kindergarten being quite large, she knows which children belong to us." Moreover, state regulations highlight that families, as stakeholders, have the right to participate in decision-making processes in the kindergarten administration, emphasizing strong communication with the administration.

4.4. Teacher- kindergarten administration relationship

The final category examined in this theme is the relationship between teachers and administrators. Upon reviewing the data obtained from interviews, documents, and observations, it was found that teachers frequently meet both with the kindergarten administrators and with other teachers in the school. T1 provided the following information about the meetings held during the year: "Twice a month, there is a meeting with all the teachers lasting a few hours. Additionally, there is a full-day meeting three times a year." The data from the observation forms show that communication with the administrators is friendly, respectful, and supportive, with problems being resolved based on mutual trust.

5. Assessment

In the forest kindergarten, as shown in Figure 5, assessment is carried out through annual assessments, portfolios, and school readiness assessments for children of a certain age.

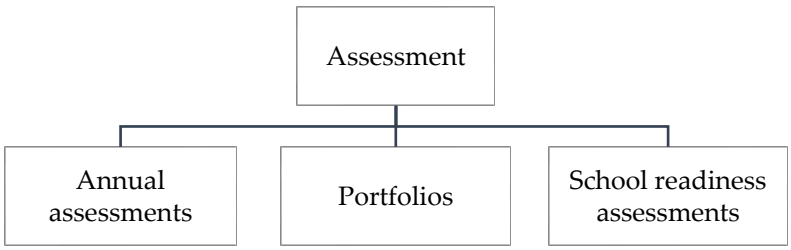

Figure 5. Hierarchical code-subcode model of Assessment

5.1. Annual assessment

In the forest kindergarten, starting from age four, each child is assessed once a year using a scale (mini-KEKS) developed by the Hamburg Institute for Educational Monitoring and Quality Development. P4 described this assessment as follows:

> *"There are scales provided by the kindergarten that educators use to assess various basic competencies of children, such as language and motor skills. This assessment occurs once a year and is presented to parents verbally by the educators as part of the parent-teacher meeting. The child's development and potential conflicts and challenges for the future are discussed."*

The "mini-KEKS" scale, developed for assessing competencies in the preschool period, enables the regular documentation of skills related to the learning areas in the preschool education program. It is conducted through observation and one-on-one activities with the child. If weaknesses or signs of talent are identified in certain areas, the aim is to provide support at an early stage. The scale has been developed in nine languages, including Turkish, to assess language skills in the mother tongue of migrant children.

After this assessment, individual parent-teacher meetings are held once a year. One of the parents, P2, expressed a desire for more frequent meetings by stating, "*I would like to receive more feedback. Perhaps routine meetings could be scheduled every three months to discuss the current situation. These meetings could be kept brief, canceled or postponed if there is nothing new to discuss*."

5.2. Portfolios

Another assessment tool used in the forest kindergarten is portfolios. P1 described this assessment tool as follows:

> *"Educators document matters related to the child in personal documentation folders belonging to each child. Children receive these folders at the end of their time in kindergarten before starting primary school. While they are still in kindergarten, they can look through their folders. However, as parents, we do not have the opportunity to see the contents, so I cannot comment on the specific content."*

Examining the contents of the portfolios reveals that each folder begins with a first-day photograph and a letter written to the child by the teachers. When reviewing the portfolio folders of children who have attended the kindergarten for several years, it is observed that they contain photographs from all of the child's birthday parties over the years, evidence of significant developmental milestones, as well as photos from routine activities and field trips. In addition, it is possible to find the child's drawings and their favorite songs in these folders.

5.3. School readiness assessments

This category includes the subcategories of 4.5-year-old assessments and the bridge year parent-teacher meeting. In Hamburg, preschool children are assessed in their kindergartens 18 months before starting primary school using a form developed for 4.5-year-old children (The 4.5-year-old skills assessment form). Since P5's child is five years old, they have gone through this process and described it as follows:

"At the kindergarten, we had a developmental discussion about my son's motor and cognitive abilities. A scale that is common to all 4.5-year-old children was used as a reference."

The 4.5-year-old skills assessment form is similar to the mini-KEKS and has also been developed in several languages. The form is prepared in line with the learning outcomes of the Hamburg education program. These assessments, conducted by teachers in the kindergarten, are sent to the primary school with parental consent, and a meeting is also held there. The kindergarten and primary school work together to ensure that the child starts primary school as prepared as possible. In this way, it is determined 18 months before school entry whether special preparations, such as support for German language skills, are needed for primary school, and the necessary steps are taken.

Meetings are also held for the parents of children who will start primary school within 18 months at the forest kindergarten. P3 described these meetings as follows: *"…Each term, a special evening meeting is organized within the kindergarten for the parents of children who do not leave the forest group to start the preschool class."*

Discussion, Conclusion, and Recommendations

In this study, the practices of the forest kindergarten during a one-year educational period were examined, and the findings were evaluated in the context of the components of early childhood education. The research resulted in the findings being grouped under five themes: curriculum, educational process, family involvement, interaction with stakeholders, and assessment.

In this study, the first prominent finding at the beginning of the school year was the strong emphasis on the child's orientation to the forest kindergarten, underscoring the priority and significance of the adjustment process. It was found that, in the forest kindergarten, the orientation process is not concentrated into a single week for all children but is spread out over time, ensuring that each child is given the necessary time and attention for orientation. This program, known as the Berlin Model and implemented throughout the state, aims to help children adapt emotionally and securely to a new educational environment and contribute to developing a secure attachment between the child and the teachers. This practice, which offers a flexible approach tailored to the individual needs of the child, focuses on minimizing separation anxiety and establishing strong cooperation between parents and teachers (Emre et al., 2018). From this perspective, it can be said that the process of adapting to school in the forest kindergarten is carried out gradually. In the initial stage, the child is brought to the school environment for short periods together with their parent to become familiar with the setting and feel safe. As the process progresses, the child stays at school for more extended periods, and adaptation is achieved by the end of the second week. As is well known, the school adaptation process is a stressful and challenging period for children (Brace, 2020). School often means separation or distance from the family environment for young children, making them anxious and vulnerable (Purtell et al., 2020). Furthermore, making new friends and finding a place within the group can be anxiety-inducing for some children. Adapting to new routines, the learning process, and encountering specific rules and expectations can also be challenging for certain children. This study observed that teachers created a secure environment during the adaptation process, established a secure attachment with the child, adapted to the child's rhythm, and provided opportunities for peer interaction. It was also found that families facilitated the adaptation process by preparing the child for school, being present in the school environment, and maintaining communication with the teacher. These results indicate that the orientation process in the forest kindergarten is managed collaboratively by teachers and families. The interaction between family and teacher is significant for children's adaptation to school, and various forms of support should be provided to help children overcome these challenges (Kaya & Akgün, 2016; Purtell et al., 2020). No studies have been found in the literature that specifically examine the school adaptation process in forest kindergartens. Since the Berlin Model is used throughout the state, it can be said that the adaptation process in this study is carried out similarly to other early childhood education institutions in Hamburg. No research has been found regarding whether there are differences in the adaptation process between forest kindergartens and traditional kindergartens in different countries.

An analysis of the forest kindergarten's educational program reveals that, in alignment with the state's early childhood education curriculum, it places a strong emphasis on play and project-based learning, alongside the consistent inclusion of routine activities each year. The most significant feature of German forest kindergartens is that the entire educational process is play-based and child-led (Fritz et al., 2014; Gall, 2018). In European implementations of the forest kindergarten approach, the program is carried out through projects, with teachers taking on a facilitative role by providing materials (Atkins, 2018). Amus (2013), reporting on observations from Finland, also noted that children participate in inquiry-based and project-based learning activities. Additionally, the educational program of forest kindergartens is shaped by the seasons, the environment, and cultural celebrations (Kruse, 2013). According to the results of this study, in addition to projects, children participate in activities such as gardening day, summer festival, second-hand market, and cultural and religious celebrations throughout the year.

According to the findings related to the educational process theme, children participate weekly in lessons such as language, mathematics, and yoga, which specialist teachers conduct. Regarding the educational dimension, the learning outcomes of early childhood education in the forest kindergarten are achieved through projects, routine activities, and weekly lessons included in the annual program. In the context of curriculum and educational process, the main significant educational method that distinguishes forest kindergartens from traditional kindergartens is their nature-based approach (Cordiano et al., 2019). In forest kindergartens, children acquire the desired skills through different methods. For example, while children in a traditional kindergarten learn addition using leaf drawings on paper, children in a forest kindergarten may learn this by collecting fallen leaves. Boyer (2020) also found that the curriculum implemented in forest kindergarten classrooms is the same as in traditional kindergarten classrooms, but the methods differ. This study's results also confirm the literature findings by showing that children achieve the program's learning outcomes through different methods.

When examining the daily routine in the forest kindergarten, it is observed that the schedule is planned as follows: Arrival at school, morning circle, breakfast, walk in the forest, playtime, return from the forest, lunch, playtime, and departure from school. Studies in the literature that focus on forest kindergartens report a similar daily schedule (Amus, 2013; Cevher Kalburan, 2019; Coe, 2013; Kane & Kane, 2011). According to the current early childhood education curriculum in Turkey, a typical day in kindergarten is shaped as follows: Starting the day, playing in learning centers, activities, time for reflection, and routine activities such as meals (MoNE, 2024). Notably, the difference in the daily routine from the forest kindergarten is that activity and play times are planned as separate time periods. As previously emphasized, forest kindergartens adopt a play-based educational approach, and play activities are child-led rather than teacher-led (Mackinder, 2023). Therefore, the second significant point distinguishing forest kindergartens from traditional kindergartens is the inclusion of teacher-led activities in the daily routine.

The findings related to the theme of family involvement and interaction with stakeholders provide strong insights into the importance of family cooperation and participation for quality early childhood education. In her book on forest kindergartens in Denmark, Williams-Siegfredsen (2017) emphasized that establishing an educational partnership with parents is a key factor in supporting children's development and learning. According to the results of this study, families contribute to the educational process in various ways, such as sending materials for activities, supporting the planning of routine events, and preparing for special day celebrations. In addition, families participate in most of the annual routine activities. They communicate regularly with teachers and administration through letters, message boards, and meetings. Williams-Siegfredsen (2017) also noted that similar methods are used to communicate with parents in forest kindergartens and that various social events, such as summer parties, weekend gatherings, and Christmas parties, are organized with parental participation. One of the key findings is that parents, children, and teachers in the forest kindergarten are in constant relationship and communication with each other. Schäffer and Kistemann (2012) reached a similar conclusion in their study of twelve kindergartens. They observed good relationships among teachers,

children, and parents in all the forest kindergartens in their study group, attributing this to a high level of parental involvement. Mackinder's (2023) research also highlighted the strong bonds between teachers and children.

Finally, at the end of the year, the assessment dimension was found to include annual assessments, school readiness scales, and portfolio-based assessments. In the annual assessment, starting from age four, children's skills related to learning areas are assessed using a scale, and the results are shared with the child's family in a meeting. The school readiness scale is applied to children of a certain age and mainly measures language skills. Portfolios are created throughout the child's time at school and are kept until graduation. In the literature, some studies assess various skills of children in forest kindergartens. For example, Sella et al. (2023) reviewed sixteen studies on the benefits of forest kindergartens and reported positive effects, particularly in motor development, physical development, creative thinking, psychological resilience, curiosity, and connection to nature. In her master's thesis, Cornell Card (2014) found that children in forest kindergartens developed communication, critical thinking, problem-solving skills, and a sense of self, place, and community. She, therefore, emphasized that forest kindergartens offer learning opportunities beyond the objectives of the curriculum. However, studies in the literature have not addressed how and by which methods these learning outcomes are assessed in the classroom, throughout the year, or during the child's entire early childhood education. It should be emphasized that these assessments are conducted by the curriculum of the state of Hamburg. In other states or countries, assessment methods in early childhood education or forest kindergartens may differ, or assessment may not be conducted.

In conclusion, this study has revealed the practices of a forest kindergarten in Germany throughout an academic year, from the orientation to the assessment. Although the same educational approach is adopted, it is recommended that the applicability of these findings in the Turkish cultural context be examined, as cultural differences may arise. The findings also highlight several implications that could be implemented in early childhood education institutions in Turkey. Initially, it is recommended to incorporate similar stages into the orientation process. Additionally, the current early childhood education curriculum in Turkey emphasizes outdoor learning and play, supporting the features of forest kindergarten practices. Therefore, increasing child-centered, outdoor play, and project-based activities are suggested. Two points should be addressed in this regard. First, it is recommended that the relevant ministries encourage all early childhood education institutions to connect children with nature, support efforts in this direction, and work to increase the number of nature-based educational institutions. Second, it is suggested that regulations be made to enable not only children from higher socioeconomic backgrounds (Koyuncu, 2019) but all children to benefit from the philosophy of forest kindergartens. Furthermore, based on the importance of family involvement in forest kindergartens, it is recommended that family participation be enriched with various annual routine activities and cooperation with families, as exemplified in this study. Finally, for researchers, it is suggested that future studies examine how this educational philosophy is reflected, particularly in the assessment dimension, through different research and in different countries.

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