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Research Article

Presentations of children in research articles framed within the theory of pedagogical content knowledge

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Abstract: Teachers' knowledge about children is a part of teachers' Pedagogical Content Knowledge (PCK). With this in mind, the purpose of this study is to generate knowledge about how children are presented in PCK research. This is carried out by examining both the existence and the nature of descriptions related to presentations of children in selected PCK research articles. The method used in this qualitative study is inspired by document analysis and the analysis is a combination of content analysis and thematic analysis. In the analysis, articles presenting results from studies conducted in primary schools and in preschools were used. The focus of the analysis is on whether or not children are presented in the texts as active participants in teaching situations. The findings were divided into three themes: *Presentations of children through the construct of PCK*, *Presentations of children's thinking and motivation*, and *Presentations of children in play-based situations*. The results show children as active participants with materials and in informal learning spaces, and that children can influence teaching situations through the teachers' knowledge of children. One theme stands out in the analysis of the texts where children are presented as active participants: *Presentations of children in play-based situations* where children are described as being in control of their play, to which the teachers then adapt their teaching. It is in these presentations that children's active participation and agency is most clearly defined.

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Children; PCK; Teaching; Agency; Document analysis

Introduction

This study focuses on presentations of children in research articles that present research in the tradition of the Pedagogical Content Knowledge (PCK) theoretical framework (Shulman, 1986; 1987). The research interest focuses on when and how children are described as active participants and in this way earlier PCK research may illustrate how children are viewed in different educational practices. In this study, two educational practices for learning are central: primary school and preschool. Studying these two practices may provide an understanding of whether or not the practice in which the PCK research takes place influences the way children are presented.

One profession that could be affected by this study is the school-age educare teachers in Sweden. In Sweden, school-age educare is directed towards education and care of pupils between the ages of six and twelve before, after, and during school. School-age educare teachers teach in an interdisciplinary way, using different fields of knowledge simultaneously, taking into account the needs, interests, and experiences of the children. PCK research in school-age educare is almost non-existent and could be an important part of the development of the profession of school-age educare teachers. Teachers in school-age educare therefore need to have pedagogical content knowledge about how to teach and plan teaching in which children are active participants. The scrutiny of the articles produced in the PCK research tradition in this study focuses on how children are presented in research articles from the related educational practices of primary school and preschool, in an attempt to initiate a discussion on how school-age educare teachers' PCK may be conceptualised. Articles from primary school are chosen because school-age educare is aimed at the age of children in primary school. In addition, preschool articles are selected because of the kindred educational attitude between preschool and school-age educare with a more holistic approach

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based on education, care, and developmental progression with the priority of the child's wellbeing and enjoyment.

PCK originated in the 1980s and has been scrutinised, criticised and developed since then (Gess-Newsome, 2015; Hume et al., 2019; Shulman, 1986; 1987; 2015). Research using PCK as a theoretical framework emphasises teachers and their knowledge. This is often related to a specific subject in school. The concept *Subject matter content knowledge* is important in this tradition for depicting teachers' ability to make instructional choices which is an important part of teachers' PCK (Shulman, 1986). According to Shulman, PCK is teachers' professional knowledge related to teaching.

The concept of agency is inspired by the sociology of childhood (James & Prout, 1997) where children are perceived as active agents in the construction of their own lives, the lives of those around them and of the societies in which they live. According to Dreke (2016), the concept of children's agency is now setting normative standards for the academic discipline of pedagogy through its influence on educational institutions through the integration of the concept into the curriculum in, for example, Brazil and New Zealand. However, the concept of agency is an important part of the analysis in this study to find out how children are presented as active participants in PCK research articles. The concept of agency is thus part of the analysis, although the focus of this study is on when and how children are presented as active participants in the texts. This study explores how children are perceived as part of teaching situations in the texts and how this is described. For this reason, the study is inspired by the sociology of childhood and not, for example, by child-centred teaching, where children may be at the centre of teaching or where children should direct their activities in teaching situations (Chung & Walsh, 2000).

A systematic analysis of how children are presented in PCK articles could contribute to an overview of how children are described in research on primary and preschool teachers' PCK, as well as to initiate a discussion of how children may be viewed in teaching situations in different educational practices including school-age educare in Sweden.

Background

This section provides a background to PCK and children's agency. Within this background there is also a section on school-age educare in relation to children and children's agency in this setting. This is to problematise children's agency in relation to the PCK of school-age educare teachers.

Reconceptualising PCK

The core idea of PCK is that teachers have a specific kind of knowledge about teaching, called pedagogical content knowledge, which is different from the knowledge of a subject expert. The current research discourse has been reformulated since Shulman (1986; 1987) began to theorise about PCK. Shulman (2015) himself then criticised his own original formulations from the 1980s. One of Shulmans criticisms of his own work was that the original research and theorising did not take into account pupils' context and learning. In recent years, researchers who have taken note of this criticism have developed new models for understanding PCK. The two most commonly used are a model of teachers' professional knowledge and skills that includes teaching knowledge and influences on classroom practice and student outcomes (Gess-Newsome, 2015, p. 31), and the other model that shows teacher knowledge and skills, student outcomes, teacher contributions, student contributions, other contributions, and knowledge exchange (Carlson et al., 2019, p. 83).

As Shulman (2015) states in his critique, the link between PCK and pupils' learning has only been studied by a few researchers, for example Alonzo et al. (2012). In their study, they show that there is a relationship between teachers' use of PCK and pupils' learning and outcomes. Based on their study, they conclude that teachers need to have *flexible, rich,* and *learner-centred* ways of teaching. Flexible teaching consists of a familiarity with different ways of teaching, so that teachers can choose between alternatives in the classroom, and an understanding of content and the ability to identify content ideas as expressed by novices. Teachers need to have a repertoire of representations to illustrate topics in different ways in order to provide rich teaching. In the learner-centred way of teaching, teachers need to have knowledge of the

common difficulties that pupils have with subjects. Knowledge of pupils' learning difficulties may be used to improve the sequencing of instructional representations (Alonzo et al., 2012).

Studies using PCK as a theoretical framework may differ, for example, depending on the subject and teacher group on which the research is focused (Park & Oliver, 2007). This provides an opportunity to rephrase concepts in PCK. Studies of preschool teachers' teaching that have used PCK as a theoretical framework rephrase concepts in PCK to fit the professional knowledge of preschool teachers. Kutluca´s (2021) findings on preschool teachers´ PCK and science teaching show that, for example, teaching with preschool children should be based on children's previous experiences, capturing unexpected phenomenon as they happen, asking children questions to challenge them and stimulate further investigation, and listening to children and their explanations. The study shows that preschool teachers' PCK includes child-centred teaching, where preschool children´s ways of learning are central, for example through play-based and everyday activities to apply the teaching of different subjects in teacher-child interactions.

Dunekacke and Barenthien (2021) problematise the components of PCK in relation to early childhood teachers. This is because content knowledge, which refers to the teacher´s knowledge of a specific topic, is different in early childhood education, where teachers have knowledge in many areas. In early childhood, as opposed to later childhood, learning is seen as play-based and integrated into everyday life, with a more holistic view of the child itself (Dunekacke & Barenthian, 2021).

Although PCK has been reformulated since Shulman's (1986; 1987) original conceptualisation, the starting point of PCK mentioned children (students) as a factor in teachers' pedagogical content knowledge: "…the conceptions and preconceptions that students of different ages and backgrounds bring with them to the learning of those most frequently taught topics and lessons" (Shulman, 1986, p. 9) and "…knowledge of learners and their characteristics" (Shulman, 1987, p. 8). These statements show that from the very beginning of Shulman's conceptualisation of PCK, children were considered as a part of the teachers' acquired knowledge base and thus their PCK.

Children's Positions in School-Age Educare

In Sweden, school-age educare focuses on education and care before, after and during school for pupils between the ages of six and twelve years. The educational activity in school-age educare is regulated by the Education Act (SFS 2010:800) and the curriculum for the compulsory school, preschool class and school-age educare (Swedish National Agency for Education [SNAE], 2022). The knowledge that school-age educare teachers transform into teaching is not directly related to traditional school subjects such as mathematics, science or language, but more often to values, social interaction, identity, crafts, play, care, and meaningful leisure time. School-age educare teachers teach in an interdisciplinary way, incorporating different areas of knowledge at the same time.

In school-age educare, children's needs, interests and experiences are the starting point and the activity is regulated in the national curriculum (SNAE, 2022). In this sense, school-age educare teachers' should teach children with their agency in mind. However, according to Ljusberg (2023), this can be a difficult task because of how children themselves can formulate what they are interested in and how the teachers view children as co-actors or objects. In Ljusberg's (2023) study, the school-age educare teachers could view the children as co-actors, as objects to be taught, or show a total disinterest in the children´s interests, indicating the children´s subordinate position in the school-age educare setting.

In the school-age educare setting, children are offered free space without the teachers, which creates opportunities for children to form their own communities (Sparrman, 2002). According to the children in Ackesjö and Landefrö's (2014) study, school-age educare is a place for play, where they can do what they want and where they learn social skills, whereas in school children learn school subjects and the teaching is based more on teacher-centered perspectives. However, the children's participation is negotiated with the teachers and with the other children on a daily basis in the school-age educare setting. For example, in the study by Elvstrand and Närvänen (2016), the children expressed that they did not oppose the rules set

by the teachers.

Research focusing on children's perspectives in the school-age educare setting shows that teachers take children's agency into account to varying degrees. In her study of children's multimedia storytelling, Klerfelt (2007) shows that teachers in the school-age educare setting gave children autonomy to use their own culture in activities. School-age educare was identified as an institution that provided space for children's perspectives.

Hippinen Ahlgren's (2021) study shows that teachers' interaction with the children varied, they positioned the children with agency or without agency in their participation. The results show that in some teaching situations in school-age educare children can be positioned with no participation and the teacher controls the teaching in these situations. However, in other teaching situations in school-age educare, the children control the teaching situations and are positioned as an active part of the teaching, and the teacher takes a position of listening to the children and supporting the children with teaching when needed (Hippinen Ahlgren, 2021).

In the school-age educare setting, the capacity to act as a child is limited and constrained by structures. Activities in the institution provide a framework within which children can act. The institution is run by school-age educare teachers who may enable or inhibit children´s participation, influence, and agency. A key factor in children´s agency is the interaction between teachers and children and how children have agency in their participation in the teaching situations or are seen as objects for the teachers' instructional choices.

Conceptual Framework

The notion of children as active participants in this article is inspired by the sociology of childhood (James & Prout, 1997; Mayall, 2001). Mayall describes a shift in thinking about children in the sociology of childhood, where children move from being objects of adults' work to being competent, contributing social actors, and where children's own wishes and expressed needs are relevant to the construction and implementation of social policies and practices. Mayall (2001) states that if adults are to respect children´s right to participate, they must create the conditions for participation.

Children can be seen as social agents, which in turn influences the way in which adult-child interactions take place and are sustained (James & Prout, 1997). Mayall (2001) points to the need for teachers to take children's views into account. The best thing about school for children is their friends, according to the results of Mayall's study. Relationships with friends enable children to make sense of, endure and even enjoy school (Mayall, 2001). Children's agency, according to Mayall (2001), is an important consideration for teaching and teachers. However, the extent to which children can be social actors in the context of school depends on how they are able to act as pupils.

Children´s agency should not be viewed uncritically. Children´s agency should be scrutinised with the aim of not putting too much pressure on children (Tisdall & Punch, 2012). On the other hand, what kind of agency children are allowed to have and what rights to agency the children have are other critical questions on the political agenda to expose children´s minority status (James, 2009). There is also an ongoing generational process within and outside institutions with social consequences for those categorised as children (Alanen, 2005). The generational condition determines the extent to which children have access to expand their agency. In society, children are placed in a subordinate position in relation to other groups. This position may limit the extent to which children can be active agents (Corsaro, 2015). Children themselves actively contribute to maintaining the social structure in their interactions with adults, they reproduce society (Moll & Betz, 2016). Children´s status in society has consequences for their identity and the recognition of their agency (Wihstutz, 2016).

According to Coffey and Farrugia (2014), the concept of agency is a contested and controversial term in sociology of youth and contemporary sociological theory. What young people's agency consists of, and how the concept may be legitimately used, is an important factor in the debate. The view that is identified in Coffey and Farrugia's (2014) study, where agency is seen as the subject's embodied potentiality to form

intra-active relations with material structures, discourses and intersubjective environments, is also a view relevant to this study. Lee (1998) argues that sociologists of childhood fit children into a standard form of sociological theory rather than developing sociological theory that fits children. Essential agency should be based on children's independence. Lee (1998) describes that "…agency is an effect of independence that emerges from a fundamental dependency" (p. 472). Children's agency in this description is dependent on external mediation.

Purpose

The purpose of the study is to create knowledge about how children are presented in PCK research. This is carried out by examining both the existence and the nature of descriptions of children as active participants in the presentations of children in selected PCK research articles.

Method

The method used in this study is document analysis, which is a systematic procedure for reviewing and evaluating documents (Bowen, 2009). "The analytic procedure entails finding, selecting, appraising (making sense of), and synthesizing data contained in documents" (Bowen, 2009, p. 28). In this study, the analysis is a combination of *content analysis* and *thematic analysis*. This type of analysis is an iterative process used in document analysis (Bowen, 2009). *Content analysis* in this study is inspired by Bowen's discussion of content analysis in the context of document analysis, where content analysis involves a document review in which meaningful and relevant parts of texts are identified in order to find pertinent information. *Thematic analysis* in this study is inspired by Braun and Clarke's (2006) way of conducting a qualitative analysis and was used in coding and constructing categories. This is done through a reading that focuses on the patterns when using the concepts of analysis (Braun & Clarke, 2006).

My analysis consists of five steps in which I have used both content and thematic analysis to develop my analytical steps: 1. Skimming the documents, 2. Reading the documents thoroughly, 3. Interpreting and coding patterns in the documents according to the concepts of analysis, 4. Constructing categories and themes according to the concepts of analysis, and 5. Presenting the results.

The concepts used in the analysis are inspired by the sociology of childhood and are used to identify how children are described in the selected PCK articles. The analysis focuses on how children's *active participation* can be understood in previous PCK research. Agency as an analytical concept is understood here from a relational approach, where agency occurs in relation to interactions (Mayall, 2008).

In the result, the presentations of children in the research articles were analysed with a focus on whether they were described as active participants. When children, students or pupils were mentioned in the articles, this sequence in the article was coded to see if it was a text that presented children as *active participants* in a teaching situation. If the description of children could be analysed with the notion of being active participants in teaching, the sequence became a segment of the coding pattern. The aims of the studies may not be primarily focused on children's agency, or may not discuss children as active participants, but if the text in the articles is written in such a way that children are seen as active participants, it is analysed as such. In the examined articles, children are referred to as children, students or pupils. However, in my analysis they are referred to as children.

The articles selected for analysis were those most frequently cited by other researchers in the Scopus database available at Stockholm University Library in June 2022. The search was done within article titles, abstracts, and keywords. The search terms were *pedagogical content knowledge* and *primary school* or *pedagogical content knowledge* and *preschool*. From the search, the 12 most cited articles of each practice were selected for analysis. The skimming process revealed that some researchers did not use PCK as a theoretical framework in their study. These articles were removed from the list and not analysed. One study focused on high school and was removed from the study. This resulted in 9 articles presenting results from studies conducted within the PCK framework in primary school and 10 articles presenting results from studies conducted within the PCK framework in preschool.

The search attempted to find research on school age educare and PCK, but no studies were found in Scopus that included school age educare and PCK or leisure time centers and PCK in titles, abstracts, or keywords. This shows the relevance of analysing studies that focus on PCK research in primary and pre-school education in order to start a discussion about PCK of school-age educare teachers.

The articles focusing on primary school and PCK included studies from these subject areas: *mathematics* (Blömeke et al., 2012; Carpenter et al., 1996), *science* (Appleton, 2002; Appleton, 2003) and *educational technology* TPACK and ICT-TPCK (Angeli & Valanides, 2009; Chai et al., 2011; Koh et al., 2014; Koh et al., 2016; Webb et al., 2016).

The articles that focused on preschool and PCK included topics such as: *mathematics* (Anders & Rossbach, 2015; Blömeke et al., 2017; Dunekacke et al., 2016; Lee, 2017; McCray & Chen, 2012; Oppermann et al., 2016; Tirosh et al., 2011) *educational technology* TPACK (Liang et al., 2013; Roig-Vila et al., 2015) and *science* (Gropen et al., 2017).

Ethical Considerations

The Swedish Research Council's (2017) information on ethical considerations information, consent, confidentiality, and use of data was followed. No sensitive material was collected in this study.

In a document analysis of previous research focusing on PCK, it is important to consider the researchers' purpose of the studied articles. Their purpose is to illustrate a part of PCK that is different from the focus of this study. This study does not criticise previous articles. The focus here is to analyse how children are presented in the texts.

The other consideration is the selection of articles. The most cited articles consist of the most popular topics for PCK research and may not be the most recent articles, as they need to have been in circulation for a while in order to be exposed to the scrutinising eye of other researchers and to be cited by them. These two considerations could be seen as a limitation of this study.

Results

In this section, the findings from the research articles are presented in themes that focus on the concept of analysis when children are presented as active participants in the text. The themes are: *Presentations of children through the construct of PCK, Presentations of children's thinking and motivation,* and *Presentations of children in play-based situations.*

Some of the articles have been given more space in the presentation of the findings because they illustrate the findings of this study. However, some of the articles are not mentioned at all if they do not present children as active participants in the texts.

Presentations of Children Through the Construct Of PCK

In Shulman's (1986; 1987) construct of PCK there are descriptions of what teachers should have in their PCK and one of these areas of knowledge is knowledge about the children they are teaching. Shulman's descriptions of teachers' knowledge about children were a starting point in some of the articles analysed, a starting point where the text shows a child with possibility to learn and that teachers in the articles have to adapt their teaching to the children. Children are described in this theme as part of teachers' PCK and how teachers should adapt their teaching to learners. For example, in Angeli and Valanides (2009) conceptualisation of ICT-TPCK (Information and Communication Technology-Technological Pedagogical Content Knowledge) the children are presented through Shulman's (1986; 1987) descriptions of the knowledge teachers need to have about learners.

> …knowledge of learners are blended into an understanding about how particular topics to be taught are represented and adapted to learners' characteristics, interests, and abilities… Accordingly, PCK encompasses an understanding of students' preconceptions and learning difficulties, and includes the most useful forms of representation, the most powerful analogies, illustrations, examples, explanations, demonstrations, and other ways of representing and formulating the subject in forms that are comprehensible to learners (Angeli & Valanides., 2009, p. 155).

Angeli and Valanides (2009) present how the pre-service teachers need to tailor the design of lessons to the learners. In this way, the article describes children as being at the centre of teaching, where they have agency in their own characteristics, interests, and abilities. The text shows that teachers need to adapt their teaching to these ideas of children and that technology as a tool in teaching, where children are active participants with these tools, supports their learning.

Children's active participation is evident in the text of the article when it states that ICT-TPCK may support the learning of children with different learning styles by transforming content with multiple representations using a variety of technological means in such a way that learners and technology form a shared cognitive system (Angeli & Valanides, 2009). "Each step of the process was exemplified with specific examples of how the pedagogical affordances of specific ICT tools could transform the content into powerful pedagogical representations tailored to the learners' abilities, interests, and previous knowledge and/or alternative conceptions" (Angeli & Valanides, 2009, p. 164-165). In this way the children are at the centre of the teaching, they have agency in deciding what is taught and the teachers have to adapt their teaching to the children. In this way, children´s needs, interests, and experiences should form part of teachers' PCK, as in school-age educare. When children are seen as co-actors and not as objects to be taught, as described in Ljusberg's (2023) study. Children's active participation in this way is achieved through the presentation of their own characteristics, interests, and abilities, rather than agency through pressure on children (Tisdall & Punch, 2012).

One article by Koh et al. (2016) also presents children through Shulman´s (1986; 1987) description of teachers' knowledge of children. According to the text, teachers need to have an understanding of children's preconceptions and difficulties in their PCK. In Koh's et al. (2016) study with primary school teachers on 21st century learning, children are presented with different difficulties in understanding the lessons and when teachers change their planning through ICT and thereby 21st century learning improves their teaching, according to the article. In the text, the children had *weaknesses* in articulating their scientific reasoning, *problems* in applying grammar rules, *weaknesses* in asking higher order questions to support the generation of rich content for their conversations. The teachers in the article revised their lessons and supported the children through various ICT tools that the children actively used. The article presents the children's preconceptions and difficulties and shows how the teachers in the study supported the children by changing their lessons. In this way, the children were then presented with agency to change teaching.

In the formulations of the research articles, children were presented with reference to Shulman's (1986; 1987) construct of PCK, particularly in the descriptions of teachers' knowledge of children. The nature of the descriptions focused on how the teachers' knowledge of children would enhance their teaching with the children as active participants and in some way at the centre of teaching. The children were presented with agency to change teaching in the texts.

Presentations of Children's Thinking and Motivation

The knowledge of children is in most of the articles a knowledge that teachers need to have in their PCK, although it is not explicit in all of the texts. The knowledge of children is directed towards different areas. In some of the articles there are sections that illustrate teachers' knowledge of children's thinking or children's motivation. For example, in the text written by Tirosh et al. (2011), the teachers in the development programme had to reflect on the children's thinking, they had to be aware of the relationship between affect and learning. There are descriptions in the formulations about the relationship between children's emotions and their ability to solve problems (Tirosh et al., 2011). Carpenter's et al. (1996) text focused on primary school children's mathematical thinking. The text describes a research-based model of children's thinking that complements teachers' PCK. More specifically, that a part of PCK is knowledge of pupils thinking, knowledge of conceptions, preconceptions, and misconceptions that children bring to the learning of a subject, which make it easy or difficult to learn. In the text it is described that pupils construct knowledge in an active way rather than assimilating knowledge. Children are presented in the text as having agency in the way that they bring informal or intuitive knowledge of mathematics to school. Children can construct viable solutions to a variety of mathematical problems. In the article the children

are presented at the centre of teaching situations, and teachers need to have knowledge of children's mathematical thinking to be able to teach in ways that help children understand mathematics. The text suggests that teachers' detailed knowledge of children's thinking in mathematics provides an explicit context for evaluating and reconceptualising decisions about pedagogy. In these articles, as in others in this study, children are seen through the lens of teachers, and in this way may have a minority status (James, 2009). On the other hand, in many of the articles it is stated that teachers need to have knowledge about the children in their PCK in order to be able to offer agency to the children, but the generational condition or position of the relationship between teachers and children determines how children have access to extend their agency (Alanen, 2005; Corsaro, 2015).

Children's motivation and engagement in activities is central to their active participation and is explored in Appleton's (2002) text where it is described that an important part of science PCK is activities that children can engage in. The text presents children in the context of how teachers in the study develop science activities that work. The presentations of children illustrate that children need to be engaged in activities, they should not be bored. Children are presented as active participants when it is described that teaching needs to involve children and be enjoyable to them. Children's active participation in activities is at the centre of what is presented in Appleton's article.

> Some teachers looked for a "gimmick" or something spectacular which should grab the children's attention: "You get the 'Oh ahh' from the kids and they remember" (Loiuse). Others merely wanted to ensure that the activity was of interest to the children, would get them involved, and would be enjoyable: "The (activities) that work the best are the ones that they have really enjoyed. Because I know that once we have done it in the class they will go home and explore it further because they have enjoyed it" (Karen) (Appleton, 2002, p. 399).

In this way, children are presented with agency to explore the phenomenon in the class and at home, they are active and have to be active according to the text.

The children's active participation is sometimes not explicitly formulated in the articles, but the notion of the teachers' knowledge of the children, of their thinking and of their motivation shows the children's activity in some of the text segments.

Presentations of Children in Play-Based Situations

When children play, they are active in the play situations. Some of the articles presented children in play. In Lee's (2017) article, which mainly focused on preschool teachers' PCK in mathematics, formulations in the text show a view of children as active in their informal learning. The text points out that preschool children are "… active mathematics learners, possessing informal mathematical knowledge… this informal mathematical knowledge is developed when children engage in problem-solving processes which often occur during children´s free play time…" (Lee, 2017, p. 232). However, the text describes how preschool teachers should notice mathematical situations in children's free play time, where children are seen as active participants, despite the teachers' focus on mathematics in the text.

Another article in the study that presents children in free play is one article by Anders and Rossbach (2015). In the text it is stated that child-oriented beliefs are very common among preschool teachers and that approaches to learning that emphasise play-based learning and cooperative learning, as well as children´s freedom of choice. Thus, children's active participation is illustrated in the text through play-based learning where children are active participants and where their freedom of choice is emphasised (Anders & Rossbach, 2015).

Children's active participation in play-based activities in preschool is also mentioned in the articles by Oppermann et al. (2016) and Dunekacke et al. (2016). Oppermann et al. (2016) illustrate in their text that early mathematics education should be integrated into children's everyday play activities, while Dunekacke et al. (2016) define in their text that preschool learning takes place in open and informal settings and starts with children's interests and needs. In this sense, the texts show children as co-actors rather than objects to be taught (Ljusberg, 2023). The children are perceived as capable of agency and not in a subordinate position (James, 2009). However, the texts in the articles do not mention the concept agency and how children are able to extend it or not (Alanen, 2005; Corsaro, 2015).

To summarise, the presence of descriptions of children is evident in the selected PCK research articles. Although it is not in the main focus of the articles, the texts show presentations of children in various forms. The nature of the descriptions of children is related to Shulman's (1986; 1987) construct of PCK and how teachers' knowledge of children is a part of their PCK. The presentations of children in the texts also illustrated descriptions of children's own characteristics, interests, and abilities as well as difficulties. The descriptions of children showed that teachers needed to have knowledge of children´s thinking and knowledge construction. In order for the children to be active participants, the texts emphasized the need for children to be motivated, engaged and to enjoy the activities. In this way, children were interpreted as active participants in teaching situations. The presentation of active participation was clearly interpreted when the texts referred to children's free play and freedom of choice. Children were presented as active participants in the articles studied when teachers were described as adapting their teaching to children's own characteristics, interests, and abilities; when children were described as motivated, engaged, and enjoying activities; and when they participated in play-based situations.

Discussion

The purpose of this study is to create knowledge about how children are presented in PCK research articles. The findings consist of three themes that emerged as the most prominent patterns when analysing children as active participants in the research articles. These themes were: *Presentations of children through the construct of PCK, Presentations of children's thinking and motivation,* and *Presentations of children in play-based situations.*

In the theme *Presentations of children through the construct of PCK*, it was evident that Shulman's description of teachers' knowledge of children in the construct of PCK was a starting point for the presentations of children in the texts. According to PCK, teachers need to have knowledge about children's characteristics, interests, and abilities, as well as their preconceptions and learning difficulties. In this way, the texts present children with the opportunity to actively participate in how teachers adapt and revise their teaching according to children's interests and difficulties.

In the school-age educare in Sweden, the national curriculum regulates the activities in the school-age educare so that the starting point is the children's needs, interests and experiences (SNAE, 2022). The studied articles show that in order to be able to do this, teachers need to have knowledge of, for example, children's characteristics, interests, and abilities in their PCK, which could be an argument for claiming that knowledge of children should be at the centre of school-age educare teachers' PCK. However, attention should also be directed towards how this knowledge can be used to make children active participants in teaching situations and how children can be given agency. Teachers' knowledge of children's needs, interests, and abilities may not ensure that children are given agency in teaching situations, given the teachers' view of children, for example when children are in a subordinate position (Corsaro, 2015).

In this theme, children's active participation is also evident in the way teaching with ICT tools is described in the texts, where ICT tools can, according to the articles, enhance both teaching and learning when children actively participate with these tools (Angeli & Valanides, 2009; Koh et al., 2016). ICT tools can now be seen as a tool used in society at large and as a powerful tool in children's own culture. Using children's own culture in activities is a way of adapting these activities through children's perspectives and agency, which is a part of teaching in the school-age educare setting (Klerfelt, 2007). Perhaps in this way, children form agency in their active participation with ICT tools and the discourse of school, preschool and school-age educare in interactive relations with material structures, discourses and intersubjective environments, in the line with how Coffey and Farrugia (2014) see agency in their study.

The theme *Presentations of children's thinking and motivation* shows presentations of children in the research articles that illustrate their thinking in mathematics and their motivation towards learning science. According to the texts, children's emotions are a part of their ability to solve problems as well as their thinking, and teachers need to have knowledge about these areas in order to teach the children (Carpenter et al., 1996; Tirosh, 2011). The nature of the presentations in this theme is that children think and feel

differently about different subjects, and teachers need to have knowledge about this and adapt their teaching to include children's feelings and thinking in different subjects. In this way, the texts present children with the opportunity to actively participate in how teachers adapt and revise their teaching according to children's feelings and thinking. Children's motivation in this theme is described through their engagement in science activities as described in Appleton's (2002) article. Children's active participation is presented in the text in a way that describes that children should not be bored in the science activities, they should be engaged, involved, and the activity should be enjoyable. Activities that motivate children are at the heart of teaching in school-age educare. Children negotiate their participation with the teachers and other children on a daily basis (Elvstrand & Närvänen, 2016). In this theme, the nature of presentations of children in the articles shows the importance of considering children's thinking, emotions, and motivation in the construction of teaching situations. However, it is questionable how the institution of school, preschool or school-age educare can always have this is in mind. Elvstrand and Närvänen (2016) state that the children in the school-age educare setting did not disagree with the rules set by the teachers. Teachers may interpret children's thoughts and feelings in different ways. The questions that arise are whether teachers are able to take children's views into account in the school context (Mayall, 2001) and what kind of agency the children are able to have in their minority status (James, 2009).

In the theme *Presentations of children in play-based situations*, children were presented as active participants in play-based situations. The articles in this theme were focused on PCK in a preschool context (Anders & Rossbach, 2015; Dunekacke et al., 2016; Lee, 2017; Oppermann et al., 2016). All articles presented children as learners in an informal context, often in play-based activities. The nature of the descriptions showed children with agency in their own free play, and some of the articles highlighted children's freedom of choice. Teachers in preschool settings, according to the texts, should integrate teaching into play-based situations. This is echoed in research by Dunekacke and Barenthien (2021) and Kutluca (2021) who describe that in early childhood, in contrast to later childhood, learning is seen as play-based and integrated into everyday life, with a more holistic view of the child itself. This is similar to how learning is perceived in the school-age educare settings, where children are given space to form their own communities (Sparrman, 2002). According to the children in Ackesjö and Landefrö's (2014) study, school-age educare is a place for play where they can do what they want. Mayall (2001) states that the best thing about school for children is the relationships they make with their friends, and in this way it is an important consideration for teaching and teachers to take children's agency into account.

PCK is a theoretical construct in which teachers have a particular kind of knowledge about teaching. This theoretical framework, as well as research using this framework, focuses on teachers and their teaching. However, as Shulman (2015) points out, there is a need for further research on, for example, children's contexts and learning. One study that focuses on the relationship between teachers' use of PCK and pupils' learning and outcomes shows that teachers need to have flexible, rich, and learner-centred ways of teaching to improve pupils' learning and outcomes (Alonzo et al., 2012). This study shows that some PCK research do show the children in a learner-centred way and that these texts describe the importance of teachers' knowledge of children. In this way, teachers in the research articles may engage children to become active participants and thereby the teachers may improve their teaching. In the research articles from the preschool context, it was illustrated that teachers need to have specific knowledge of children in order to be able to integrate their teaching into informal and play-based situations where the children are active participants. In a school context, the mediations could be influenced by teachers' instructional choices. Mayall (2001) argues that if adults are to respect children´s rights to participate, they need to create conditions for participation. The findings of this study show descriptions of teachers' instructional choices, and in the texts it is evident that teachers decide how children can or cannot participate. Children´s participation and agency is in the hands of teachers and their view of children, even though the teachers in the research articles talk about child-centred teaching (Chung & Walsh, 2000). Children's agency may be limited in this way by their subordinate position (Corsaro, 2015).

Children's agency and active participation in teaching situations, I argue, is an important part of developing PCK in different educational contexts. Teachers' knowledge of pupils is a part of the knowledge

domains in PCK, but how children might have agency and thus be active participants in teaching situations is shown in the texts, but is not foregrounded or conceptualised in the research articles studied. The question is how children's perspectives, including their agency, can be a part of teachers' PCK.

Limitations and Implications for Future Research

The limitations of this study are related to ethical considerations. In this study, it is described that the purpose of the researchers in the research articles is different from the focus of this study, which may limit the findings in how children are presented. The other factor in the ethical considerations was the selected articles, which consisted of the most cited articles, which limits the selection of, for example, different types of PCK research. In addition, this is a small study and the study might have benefited from a larger number of articles analysed.

Implications for future research would be to continue to explore how knowledge of children's agency might form part of teachers' PCK. In addition, this study could possibly be the starting point for a discussion about conceptualising school-age educare teachers' PCK in relation to children's agency.

Conclusions

This study focuses on presentations of children in PCK research articles. The results show examples of formulations in the texts where children are being presented as active participants in teaching situations. The ways in which children are presented in the research articles reveal three themes: *Presentations of children through the construct of PCK, Presentations of children's thinking and motivation,* and *Presentations of children in play-based situations.* The presentations of children focus on teachers' knowledge of children in a variety of ways, where their knowledge and view of children's active participation may be crucial to whether children are given possibilities to agency in teaching situations. However, the theme that stands out is *Presentations of children in play-based situations* where children are described as being in control of their play to which the teachers then adapt their teaching. It is in these presentations that children's active participation and agency is most clearly defined.

From the perspective of school-age educare, this study shows that a conceptualisation of PCK adapted to school-age educare, where for example children's active participation and agency are a part, could make PCK an important theoretical framework for school-age educare, where the starting point for teaching is children's needs, interests, and experiences. In conclusion, a discussion is needed on the relationship between school-age educare and PCK to create a shift in thinking, as well as on PCK and children's participation rights and agency in different educational practices. This shows the need for further research to discuss children's agency within the theoretical framework of PCK.

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* Analysed research articles

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Research Article

Drama-based pedagogy for preschoolers: A narrative inquiry of Nepali educators

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Abstract: Drama-based pedagogy has become a widespread approach in early childhood education worldwide. However, in the context of Nepal, drama-based pedagogy is a new concept in early childhood education, as conventional teaching is highly influential in pedagogical practices. This study explores the early-grade teachers' understanding of drama-based pedagogy, privileges, and challenges. This study subscribes to narrative inquiry as a method and social constructivism and experiential learning as theoretical referents to present the stories of two early-grade teachers of a private preschool in Lalitpur, Nepal, regarding their experience of knowing and using drama-based pedagogy in the classroom. Data was collected through in-depth interviews with the participants and analyzed using themes—drama-based pedagogy for conceptual-building, drama-based pedagogy for holistic development, and time constraints as a hindrance in drama-based pedagogy. The study argued that drama-based pedagogy supports holistic development and strong conceptual building in early graders. Thus, it enhances their cognitive, psychomotor, socioemotional, and language skills. However, this study also revealed that teachers find time constraints significantly hinder practising drama-based pedagogy. Despite the challenges, this study strongly recommends using drama-based pedagogy for meaningful engagement of early graders.

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Introduction

Early childhood is an essential and crucial phase in one's life as it is a foundation phase to build one's life and future. Early Childhood Education (ECE) provides an education program focusing on children's developmental stages, personal differences, and capabilities (Maharjan et al., 2024; Street, 2021). In Nepal, the Government and private sectors are operating ECE programs with similar goals of providing quality education and care to children in their early years. Education during the early years of development has a life-long impression on children's development, and researchers especially emphasize the significance of quality education during these phases (Haslip & Gullo, 2018). The primary objective of early childhood education is to maximize the prospective a child inherits by birth or, in other words, to foster holistic development in a child. Different pedagogies, like experiential learning, project-based learning, play-based learning, inquiry-based learning, and drama-based pedagogy (Laverie et al., 2022) are applied in preschools in Nepal. However, the primary concern of this article is to explore and understand the preschool teachers' experience of using drama-based pedagogy in Nepal. It also helps understand the importance of drama-based pedagogy in preschool classrooms.

Early childhood is the most significant phase in human life. Irwin et al. (2007) stated that achieving a successful life course becomes problematic if the window of opportunity provided by early years is missed. So, as educators, we are responsible for creating better learning opportunities for young children at school. Preschools in Nepal have been trying to provide child-friendly and developmentally appropriate learning environments. With trained teachers and various teaching-learning resources, preschools have implemented child-centric learning activities to some extent. Subedi and Shrestha (2020) have argued that

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sociocultural barriers still obstruct the creation of a learner-friendly environment. In our society, children are expected to read and write once they are admitted to preschool. To fulfill these expectations, teachers focus on the academic achievement of a child rather than skill development, leading toward implementing a traditional approach to teaching and learning. Namaziandost and Çakmak (2020) argued that there is no opportunity to adapt the pace of learning to the students' different learning capabilities in the traditional teaching approach. One of the significant drawbacks of the conventional teaching approach is that it does not promote 21st-century skills among learners. The 21st-century skills are communication, collaboration, critical thinking, problem-solving, and creativity (Wrahatnolo, 2018). These skills help preschoolers build a strong foundation for their future. These skills can be obtained through implementing different innovative pedagogies in classroom teaching, such as drama-based pedagogy. Based on our engagement, preschools in Nepal still need to catch up and implement innovative pedagogies like drama-based pedagogy in their classrooms.

Drama-based pedagogy is a blend of teaching techniques (including activating dialogue, theatre games as metaphor, image work, and role work) designed for classrooms aligned with the curriculum (Dawson & Lee, 2018; Lamichhane et al., 2023). Teachers can use drama-based pedagogy in several academic areas. It can launch a new concept or theme, check students' knowledge, or expand their learning. For instance, a teacher can introduce roleplay activities while introducing family members under the theme "My Family," where the students will play the role of different family members and learn about the distinguished characteristics of each family member. The central concept of Drama-based pedagogy is that the educator acts as an artist, collaborating with students who each bring unique characteristics shaped by their varied life journeys and cultural contexts (Ma & Subbiondo, 2022). Students from various social and cultural backgrounds come together in a classroom to achieve shared learning goals. These students have their own diverse experiences and prior knowledge. Drama-based pedagogy allows these students to express and share their experiences and learn from each other by engaging meaningfully.

Drama-based pedagogy activities help students acquire skills in communication, cooperation, and critical thinking to work in groups, challenge traditional ideas about texts, and raise questions (Dunn & Jones, 2022). When students get the opportunity to perform, they also get the opportunity to express themselves. Creative drama supports the natural development of early-grade learners (Lindberg, 2015). Through creative drama, young learners develop their imagination and communication skills. Implementing drama-based pedagogy in preschool helps young students develop socially and emotionally as they get to know themselves and their emotions and live in harmony within society. Usakli (2018) stated, "Drama gives children opportunities to explore, discuss and deal with difficult issues and to express their emotions in a supportive environment." (p. 13). Drama-based pedagogy is about more than just performing. It is also about creating, discussing, and planning, which allows the students to develop several skills along with knowledge development. When students get involved in role plays, they get opportunities to enact characters and conceptualize the idea of the theme they are learning. Guided by the question—how do early-grade teachers narrate their experiences of knowing and doing drama-based pedagogy in their classroom practices? This study explores the understanding and experiences of drama-based pedagogy by early-grade teachers. Thus, this study incorporates narrative inquiry to narrate the participants' stories through the lens of social constructivism and experiential learning as theoretical referents.

Theoretical Referents

The authors have adopted social constructivism and experiential learning as the theoretical referents for this study. Social constructivism posits that learning occurs through interaction, particularly social interaction (Vygotsky, 2011). Scholars like Kim (2002) and Amineh and Asl (2015) emphasize that humans develop meaning through interactions with others and their environment. Amineh and Asl (2015) define social constructivism as a theory of knowledge in sociology and communication, examining individuals' jointly developed understandings of the world. Aligning with these perspectives, the researchers also interacted with the participants (preschool teachers) to generate meanings from their lived experiences

regarding drama-based pedagogy. Similarly, Adams (2006) asserts that social constructivism views learners as active co-constructors of knowledge and meaning. In this study, students construct knowledge by communicating and interacting with peers and teachers, aligning with social constructivist perspectives.

Additionally, we view the study through the lens of experiential learning. Kolb et al. (1984) propose that experiential learning theory (ELT) provides a holistic model of the learning process and adult development. Experience plays a central role in learning and educating the learners (Dewey, 1986). For instance, how have teachers experienced integrating drama as a pedagogical tool? Did they find it effective in developing learning skills among students, or did they encounter challenges in implementing drama-based pedagogy? Teachers' experiences significantly impact this study. Participants' views on drama-based pedagogy are subjective and shaped by their experiences. Alongside the researchers' interest in drama-based pedagogy, newly generated knowledge becomes intersubjective. Boggs et al. (2007) highlight that drama is a powerful mode of teaching and learning, drawing students into an experiential process. Kolb (1984) further emphasizes that learning is a continuous process grounded in experience. Meaningful learning occurs when individuals engage in social activities. Intersubjectivity, a shared understanding based on common interests and assumptions, forms the foundation for communication among individuals.

Method

This article sought to explore how preschool teachers incorporate drama-based pedagogies in their classrooms, using narrative inquiry as the research method. Clandinin et al. (2007) added, "Narrative inquiry is a methodology that frequently appeals to teachers and teacher educators. Part of the appeal is, no doubt, the comfort that comes from thinking about telling and listening to stories" (p. 21). Hence, narrative inquiry was applied to capture early-grade teachers' lived stories regarding drama-based pedagogy's application in their pedagogical practices. Further, Clandinin (2022) has stated that narrative inquiry is a process of conceptualizing and studying individuals' experiences over time and in context. Through this study, the authors have explored how the implementation of drama-based pedagogy has helped early graders understand what they are learning through the narratives of two preschool teachers. This article further highlights the importance and scope of drama-based pedagogy in preschool or early childhood education. As the first author has been working in the Early Childhood Education (ECD) sector for over two decades, she found that young learners benefit more through innovative pedagogies that engage them in learning. For example, children who play different characters conceptualize the drama's theme through play. Since the authors planned on writing a drama-based pedagogy article, they considered exploring the benefits and challenges of implementing drama-based pedagogy in preschool. To serve the purpose of the article, the first author conducted the fieldwork with assistance from the second and third authors. The second author provided critical and constructive feedback, shaping the article's overall structure by offering comments here and there. Similarly, the third author acted as a critical friend, adding observations and editing the article. We valued each of our contributions from the beginning to the final stage of the article. The selected site was a preschool at Gokarneshwor Municipality in Kathmandu. The site was purposively selected because the authors had positive experiences from previous cooperation in the same school, so it was technically easier for them to conduct the research. Moreover, the authors knew the school had been applying innovative pedagogies to engage the learners. The authors chose two early-grade teachers from this school as research participants because they wanted to get the participants' in-depth narratives. Aligning with the above, Cresswell (2013) stated that "narrative research is best for capturing the detailed stories or life of a single individual or the lives of a small number of individuals" (pp. 73-74). Thus, before conducting the interview, the researchers verbally obtained consent from the participants and assured them their identity would be kept confidential by using pseudonyms.

The first participant was a grade teacher of Senior Kindergarten (SKG). She has been teaching in this school since its establishment. She started teaching in this school as a grade teacher of Play Group; later, she was upgraded, and currently, she has been a grade teacher of the SKG for the past two years. The interview started with her brief introduction. She was pursuing her master's degree in humanities from Tribhuvan University. The second research participant was new compared to other teachers working in

the school; she was teaching Junior Kindergarten (JKG) students. She has just completed her one year of teaching in the school. She was studying in a second-year bachelor's program; thus, she used to go to college in the morning from 6 am to 9 am and work in the school from 9:30 am to 4:30 pm.

Before the interviews, the authors briefly studied drama-based pedagogy and its importance in preschool education and prepared the in-depth interview questions. In-depth interview was the tool used to explore the experiences and understanding of the research participants. In-depth interviews help co-produce knowledge, collaborating with participants, researchers, and other aspects of their encounters (Dahal, 2023; Djenontin & Meadow, 2018). Hence, the authors used an in-depth interview as a research method, where we prepared and asked open-ended questions to the participants with the help of the first author. The first author was responsible for conducting the interview. The first author got involved in the dialogical process during the interview, which offered a deeper understanding of how the participants understood and implemented drama-based pedagogy in their classrooms. Before the interview, the authors obtained consent from the school and the teachers (research participants) and took their appointment. The questions asked during the interview were guided by the main research question, "How do early-grade teachers narrate their experiences of knowing and doing drama-based pedagogy in their classroom practices?" The authors listened and captured all the responses through recording and field notes. The narratives derived from the interview recordings were transcribed, coded, categorized, and interpreted under suitable themes, along with literature support. After listening to the recorded interviews, we found that the teachers were not trained in drama-based pedagogy, so they were initially unaware of it. However, they have been practicing roleplay activities in their school as an influence on different social media platforms like Facebook and YouTube.

Participant's Vignette of Drama-based Pedagogy

This section of the article unleashes the experiences and sharing of preschool teachers in terms of the use of drama-based pedagogy in their classrooms.

First participant: The Senior Teacher

The first author shared the purpose of taking the interview and took the participant's consent. She then started the interview by asking the first participant (Senior teacher) whether she had heard about the term' drama-based pedagogy'. The senior teacher said she had not heard about it but guessed that maybe using drama to teach is a drama-based pedagogy. Next, again, the first author asked the participant about the different types of activities that she has been doing in her classroom. The teacher said she uses flashcards, videos, and chart papers to teach the students. Further, the first author asked her if she had ever conducted roleplays or storytelling sessions in the classroom because the participant was unclear about drama-based pedagogy and its varieties. In response to the question, the senior teacher said she has been using roleplay activities in her classroom to teach concepts like 'My family and my home'. She further shared one of the incidents of using roleplay activity, which is narrated below:

> Recently, when I taught the "My Family and My Home" theme, I conducted a roleplay activity where students were asked to perform a drama about the roles and responsibilities of different family members. For this particular activity, I prepared a head crown with the names of different family members on it. Before the roleplay, I told the students about the roleplay activity we would do. I briefly told them that the roleplay is about the roles and responsibilities of different family members at home. I told them that some of them would be doing the roleplay activity, whereas others would watch and observe the act. I further told them that those performing students would be given head crowns with the names of family members they would be portraying in the roleplay, and they must act accordingly. Then, I asked the students to volunteer their names for the roleplay. After selecting the performers, I gave them crowns and asked them to act accordingly. I was very astonished by the act they had come up with. Everyone enjoyed the roleplay activity; even the ones who were watching loved the activity. I found that this particular activity was very helpful in making the learning process fun, and I found the students more attentive. The concept that the students learned from this roleplay activity was more effective than the one they received from other types of activity. I will use these activities whenever I get enough time.

Second Participant: The Junior Teacher

Similarly, the first author shared the purpose of taking the interview and asked the participant

whether she knew what drama-based pedagogy was. The Junior teacher also responded that she had not heard about it. Next, the first author asked the Junior teacher whether she was also doing roleplay activities or dramas in her classroom. The junior teacher responded that initially, she was confused about how to teach small children. However, as time passed, she started spending time with other fellow teachers, and with their support and guidance, she began conducting roleplay activities in her class. The junior teacher said she started using roleplay as one of the activities inside the classroom after her seniors suggested it to her.

> I am very new in this field of education. Although I recently completed my three months of Montessori teacher's training, I have no teaching experience. Hence, I have been getting help from my seniors and coordinator, ma'am, in terms of making lesson plans and designing activities for my classes. We have been using different varieties of teaching-learning activities in our classroom to give the concept of the same content. We mostly use flashcards, audio, rhymes, videos, display charts, and concrete materials or models to teach in our classes. We also use roleplays for some themes, but as the roleplay activity is a bit time-consuming, we do not use it frequently. My students love roleplay activities, as they are more engaging and entertaining. Last year, in the 'animal' theme, we did a roleplay activity where all the students (12 students) in my class were asked to pick the name of an animal. Then, they were asked to act and make the sound of that particular animal and share some information about it. I also made each child prepare a facemask of the particular animal that they had chosen. All the students loved that roleplay activity. All the children in my class talk about this activity, and I also love to have these kinds of activities in class, but sometimes time constraints are an issue. We also have to prepare for these types of roleplay activities. Because of that, we cannot do these kinds of fun activities in our class frequently.

Meaning-Making of the Narratives with Themes

This section of the article presents and explores the understanding of the ideas or knowledge generated from the above narratives in the form of different themes based on the formulated research problem, research question, and purpose of the study.

Drama-based Pedagogy for Conceptual-building

Children need concepts to help them understand and handle the world around them (Magolda, 2023). Preschools help children learn different concepts through child-centric learning approaches. Drama-based pedagogy, being a child-centered approach, promotes artistic experiences among students. Rather than the final product or theoretical outcome, it emphasizes the pedagogical approach to how learners engage and learn concepts and skills (Lee et al., 2020). Unlike the traditional teaching approach, drama-based pedagogy allows students to explore and engage their role as learners in the learning process. Drama is a valuable form of communication that enables students to work together cooperatively in a shared experience (Hawkins, 2021). Drama-based pedagogy in preschool promotes developing listening, speaking, and comprehension skills. It further focuses on the broader objectives of problem-solving and creative thinking by creating a kinesthetic and interactive experience. Cawthon and Dawson (2011) stated that drama-based pedagogy works as a catalyst for knowledge generation. In drama-based pedagogy, teachers approach students to have a direct role in teaching and learning through constructivist practices such as discussing and executing the drama. When students and teachers include drama-based pedagogy activities, discussions can be encouraged and created more passionately and knowingly (Caliba, 2022). Dialogue and communication help reserved or solitary students to become more poised about contributing to classroom learning. These students often lack confidence in their capabilities; drama-based pedagogy provides the students with the skills and confidence required to speak out their thoughts among their classmates. Drama also provides room for endless improvisation and experimentation. Hence, incorporating drama into classroom learning helps to increase the retention of information or knowledge shared. With the above, the Senior grade teacher says,

> The concept that the students learned from this roleplay activity was more effective than the one they received from other types of activity. I use these types of activities whenever I get enough time.

As students get involved in the process of action and dialogue followed by a discussion of the topic taught through drama, it promotes lifelong learning. Conceptual building and knowledge retention are more effective when taught through drama-based pedagogy.

Drama-based Pedagogy for Holistic Development

Nordgaard (2023) has defined drama-based pedagogy as an umbrella term covering various drama activities: roleplay, writing-in-role, improvisation, theatre, creative drama, and process drama, to name. Children of all ages love roleplay, and preschools use it as one of the classroom pedagogies. Both the participants have shared how they have been using roleplay to introduce topics in their classroom. The senior teacher says, *'Everyone enjoyed the roleplay activity; even the ones who were watching loved the activity.'* Drama-based pedagogy helps to promote holistic development among learners. Holistic development in young learners refers to the comprehensive growth of a child across various areas, including physical, cognitive, and social-emotional development, connecting their feelings, doings, and thinking (Dahal, 2022; Ntshangase, 2022). The junior grade teacher mentioned in her sharing that once she had implemented a roleplay activity in her class, she asked her students to roleplay different animals. '*The students acted like their favorite animal, made their sounds, and shared the information they knew about the animal*,' says a junior-grade teacher.

Later, the teacher made them make face masks of that particular animal. All these activities that the teacher did were part of drama-based pedagogy. When the students were asked to act and make sounds like the given animal, they learned through experiential learning. The activity conducted by the Junior grade teacher, where the students enacted their favorite animal by making their sounds and gestures, helped the students to learn more about the animals. Further, the roleplay activity helped the students to remember the animals they knew about. Research has revealed that "Play is fundamental to cognitive development" (Bhagat et al., 2018, p. 130). These activities further helped the children develop their cognitive skills as they learned new concepts. It also promoted physical development among the children as they acted out animal roles through movements.

Along with these, the students also got the opportunity to express their emotions (joy and excitement) through this activity; hence, the roleplay activity, a form of drama-based pedagogy, helped promote holistic development (physical, cognitive, and social-emotional development) among the students. Through drama-based pedagogy, students learn gestures, develop socio-emotional skills, and enhance their speaking skills while boosting their creativity and imagination (Irugalbandara, 2023). Drama also engages learners from diverse backgrounds to share their unique perspectives and tales. The beauty of drama-based pedagogy is that it quickly engages students actively and instantly to help create a learning environment where their reasoning skills are acknowledged within multidisciplinary to transdisciplinary learning opportunities (Sotireli, 2019). Further, it supports students of different learning styles, such as learning by doing (Kinesthetic), learning through audio/visual (visual and audio), learning through collaboration and interaction (intra and interpersonal), and involving them actively in the learning process. Drama-based pedagogy seeks dynamic and dramatic methods to involve students in scholastic, emotional, and creative educational processes through discourse in all curriculum areas (Dunn & Jones, 2022; Lee et al., 2020). Thus, drama-based pedagogy promotes a child's holistic development.

Time Constraints as a Hindrance in Drama-based Pedagogy

Time is one of the essential factors that a teacher should consider while preparing lesson plans or classroom activities. In Nepali preschool, teachers are provided with a limited period to complete their lesson plan execution as there are other activities the child needs to spend time on, like refreshments and recreational activities. Moreover, they are strictly assigned course completion on time, and parents' expectations are more focused on writing and reading skills; therefore, teachers are skeptical about drama-based pedagogy due to losing class control, noise level, time constraints, and inability to achieve their learning goals. Both teacher participants have shared their views on how time plays a critical role as a constraint in the continuation of drama-based pedagogy in class, primarily when a single teacher handles twenty students in a class. According to government standards, the teacher-student ratio in Nepali preschools is 1:25, and access to primary education has improved (UNICEF, 2023).

Similarly, the school where the participants are teaching has a 1:20 teacher-student ratio. Thus, it becomes very challenging for the teacher to manage the time and run the class effectively. The Junior

teacher says, *'It needs a lot of time to plan, prepare, and execute role plays (drama) in a class, and frequently using it as classroom pedagogy is impossible.'* Planning and executing drama-based activities in the classroom is a very time-consuming activity. Dimililer et al. (2017) states that drama-based pedagogy is time-consuming. Designing and implementing drama with learners of an early age is challenging. The limited period to complete preplanned content delivery in the classroom with early-grade children is a tough job as things might not go as planned most of the time. Early-grade learners' behaviors are unpredictable, and working with them is challenging. Oktavia et al. (2022), in their study, found the unexpected characteristics of early-grade learners very challenging for teachers.

When a learner showcases unpredictable behavior or characteristics in a classroom while the teacher is teaching, the whole teaching-learning process gets disturbed, and the learning outcome is not achieved. The Junior teacher shared that while conducting the roleplay activity, students got so excited that the class was uncontrollable, and the teacher had to struggle a lot to complete the activity in a limited time frame.

Discussion

This study shows that drama-based pedagogy has gained the limelight for engaging and meaningful learning in the era of different innovative pedagogical approaches. Belanger (2022) says learners conceptualize better when actively engaging in the experience. Drama-based pedagogy enables students to actively participate in learning by putting them in the center (Köksal, 2020). In the roleplay activity the Junior grade teacher conducted, she asked the early-grade learners to choose their favorite animal and enact how it moves or makes sounds. The teacher could have allowed the students to enact any random animals of her choice, but she let them choose themselves by offering choices for the early-grade learners. This small gesture by the teacher helped the students gain ownership of the activity and led to their active involvement.

After the interview sessions with the research participants with the help of the first author, we researchers realized that drama-based pedagogy is not implemented in Nepali preschools. Although the Junior and Senior teachers have been using roleplay as a classroom activity, they are not using drama as a form of classroom pedagogy. In the Nepali context, educational awareness regarding the use and importance of drama as a form of art-based pedagogy, especially in the early years of education, is very much needed (Pant et al., 2023). Preschools claim to provide child-friendly and child-centered learning environments in preschool, but different innovative pedagogies that help early-grade learners learn more effectively and in a fun way have rarely been explored and implemented. The educational system is very much lacking in implementing different innovative educational pedagogies. Educational institutions still focus on implementing traditional rote learning methods, which disorients early-grade learners' learning.

One of the participants mentioned time as one of the constraints in the implementation of drama-based pedagogy. The authors knew preschool classes have a grade teaching system. When a school provides the facility of grade teaching, as an efficient teacher, one should manage time and promptly and effectively conduct classroom activities. Teachers struggle to manage time while incorporating drama-based pedagogy in their classrooms because they lack skills as they have not been well-trained. Teachers should learn and embrace innovative pedagogies to effectively engage early-grade learners. Most educational practitioners in Nepal are very comfortable continuing their traditional teaching approaches (Dahal et al., 2019; Sunar et al., 2024). They are not ready to leave their comfort zone and try new educational pedagogies (Luitel et al., 2022). It is high time that educationists jump into action and conduct teacher professional training programs that help create awareness about different innovative pedagogies like drama-based pedagogy so that our teachers will be aware of it, know its importance, and know how and why to implement it.

Conclusion and Implications

This article attempted to explore the use of drama-based pedagogy in preschools in Nepal. These explorations shall help those preschool teachers who want to understand drama-based pedagogy and its

importance in preschool. Among different forms of drama-based pedagogy, this article explored roleplay, its implementation in preschool, and its effect on early-grade learners' learning. Based on the experiences of the participants and the supporting literature, this article concludes that drama-based pedagogy promotes the holistic development of early-grade learners by enhancing their cognitive skills, psychomotor skills, social-emotional skills, and language; however, there are challenges of time constraints that a teacher experiences in their classroom.

This study can provide educators with remedial approaches to drama-based pedagogy, its importance, and its implications in Early Childhood Education (ECD). It also strongly recommends that in Nepal, drama-based pedagogy can be one of the practical, innovative pedagogies that early-grade teachers can use in their classrooms to promote the holistic development of children through life experiences. Similarly, it includes the stories of ECD teachers about their experiences of implementing roleplay and its effect on early-grade learners' learning; thus, it supports ECD teachers in adapting this innovative pedagogy. However, the challenges of using drama-based pedagogy in early-grade classrooms need further research on how it could be mitigated to be more effective and efficient.

Declarations

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Annexure

Interview Questionnaire

1. Can you please introduce yourself?
2. How long have you been working in the early education field?
3. Can you please share your academic background?
4. Have you taken any teacher training programs before?
5. Have you heard about drama-based pedagogy? What do you think it is?
6. What different activities have you been doing in your classroom?
7. How do you engage the learners in the learning process?
8. Do you integrate roleplay activities in your classroom teaching-learning?
9. How often do you do these activities?
10. How do students react to these activities?
11. What are the benefits of roleplays in early childhood?
12. What challenges or difficulties have you faced while conducting roleplay activities in your classroom as a teacher?
13. Would you suggest Drama-based pedagogy to other colleagues?

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Research Article

The naturalistic teaching process as an inclusive practice: Preschool teachers' perspectives

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Abstract: According to the Ministry of National Education, 2013, children with diverse needs have the right to receive their education in environments designed to meet their needs and allow them to interact with their peers. Instructional programs that can meet all children's needs are one of the suggested programs during the implementation of inclusive programs. The Naturalistic Teaching Process is a recommended method in this context. The Naturalistic Teaching Process is a natural instructional process that allows children to acquire and reinforce new skills. This study aims to define the perspectives of preschool teachers who have children with diverse needs in their classrooms on the Naturalistic Teaching Process. Semi-structured interviews collected the data. Fifteen preschool teachers participated in this study. The data analysis employed an inductive approach based on content analysis. The study findings indicate that preschool teachers tend to follow a child's lead when setting educational objectives for children with diverse needs and developing an individualized educational program. Additionally, the study defines preschool teachers' abilities as inadequate for collaboration with families and specialists. Preschool teachers partially use the strategies and techniques, environmental arrangements, and prompts used in the Naturalistic Teaching Process, but they do not apply them systematically, indicating a need for teacher training in these areas.

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Introduction

The preschool period is considered the most important years of life, and the values and attitudes acquired in early childhood form the basis of a person's future life (Oktay, 2002). The preschool period is defined as the educational process that is appropriate for the child's developmental level, observes individual differences, provides rich stimulating environmental conditions, and directs children's development in line with society's cultural values from the child's birth to the beginning of primary school (Güven & Azkeskin, 2012; Oğuzkan & Oral, 1997; Oktay, 2002;). Turkey implements a preschool education program that strives to enhance the learning experiences of children in preschool education institutions, promote healthy growth, attain optimal development across all domains, foster self-care skills, and prepare them for primary school (Ministry of National Education [MoNE], 2013). Preschool education, covering the first years of life, plays a crucial role in the development of children with diverse needs or those at developmental risk. In this sense, it is observed that there are significant developments in terms of enabling children with diverse needs to benefit from preschool education within the scope of the legal regulations developed in Turkey. Thus, according to the Special Education Services Regulation, *"Compulsory education for individuals in need of special education is the education and training process that starts in the preschool education period and includes the secondary education period."* The same regulation includes the phrase, *"Preschool education is compulsory for children with diverse needs who have completed 36 months* (MoNE, 2018). It is stated that the main purpose of education, health, and care services to be provided to children with diverse needs or at risk and their families in the early period is to minimize children's negative conditions and support their quality of life at the highest level (Er-Sabuncuoğlu & Diken, 2010). The ultimate goal of special education services in the preschool period is to enable children with diverse needs to receive education

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together with their typically developing peers. Inclusive practices refer to the provision of support for special education services to preschool school teachers, children with diverse needs, and their typically developing peers (Acarlar, 2013; Akçamete, 2010). Most studies on inclusive practices in preschool education in Turkey incorporate the perspectives of teachers. According to Sucuoğlu (2004), the majority of studies conducted in Turkey on inclusive practices between 1980 and 2005 focused on determining teachers' thoughts, approaches, or attitudes toward children with diverse needs and inclusion. Many studies obtaining the views of preschool teachers determined that teachers had insufficient knowledge about inclusive practices (Altun & Gülben, 2009; Özdemir & Ahmetoğlu, 2012; Seçer, 2010; Sığırtmaç et al., 2011; Sucuoğlu et al., 2013; Sucuoğlu et al., 2014; Tufan & Yıldırım, 2013). On the other hand, the factors making inclusive practices successful are listed by Kırcaali-İftar and Batu (2007) as teachers, typically-developing children, children receiving inclusive education, school management, families of children receiving inclusive education, physical environment, families of typically-developing children, support special education services, and additional services. Teachers are indicated as the most important of these factors (Sucuoğlu et al., 2013; 2014). In addition to the impact teachers have on the success of inclusive practices, the teaching methods they use are also considered important. In this context, it is important to include teaching methods used in naturalistic settings in inclusive practices (Allen & Cowdery, 2005; Özen et al.,2013; Tekin-İftar, 2008). The National Professional Development Center on Inclusion [NPDCI] (2009) recommends the use of the Naturalistic Teaching Process (NTP) in inclusive practices. The primary objective of the NTP for children is to integrate routines, transitions, and activities from their daily lives into their naturalistic experiences by serving as a model, expanding, adapting, and transforming them into meaningful learning opportunities (Diken, 2013; Snyder et al., 2015). The NTP has four basic features. These are listed as follows: (a) following a child's lead and interest; (b) using routines, activities, and transitions as a teaching setting; (c) using activities, objects, or toys as natural reinforcers; (d) teaching generalization (Diken, 2013; Pretti-Frontczak & Bricker, 2007). The NTP adheres to the principles outlined in the report of Developmentally Appropriate Practices (DAP) (Copple & Bredekamp, 2009) prepared by the National Association Education of Young Children [NAEYC] (2014) and the report of Recommended Practices for special education in early childhood by the Council for Exceptional Children (CEC). The National Autism Council [NAC] (2015) published the National Standards Report, which recommends the NTP and the teaching methods and techniques used in naturalistic settings. This report emphasizes the importance of the teacher's perspective on education and the NTP they use for successful inclusive practices, particularly in preschool inclusive practices. However, when examining the preservice courses preschool teachers in Turkey undergo, it's evident that they enroll in a mandatory two-credit course on special education. This course primarily focuses on theory, with no practical component for children with diverse needs ((Council of Higher Education [CoHE], 2018). This may limit the methods and techniques preschool teachers use in their practices, particularly for children with diverse needs (Sucuoğlu et al., 2015).

Using the NTP in inclusive settings is among the recommended practices in terms of creating multiple learning opportunities and being compatible with the curriculum (Horn et al., 2000; Frontczak & Bricker, 2001). Furthermore, studies from around the world stress how important it is for preschool teachers to use NTP strategies and techniques, along with prompting and setting up the environment, when working with kids who have diverse needs in natural settings (Copple & Bredekamp, 2009; NAC, 2015; NPDCI, 2009). Researchers developed the NTP to enhance children's engagement and learning through inclusive practices (Hemmeter, 2000; Odom, 2000; Pretti-Frontczak & Bricker, 2007; Snyder et al., 2015; VanDerHeyden et al., 2005; Wolery & Hemmeter, 2011).

As the importance of inclusive practices in early childhood has grown, changes have begun to occur in the teaching approaches presented in inclusive settings. These changes have started to give way to game-based, child-centered approaches rather than teacher-centered and directive approaches (Hemmeter, 2000). The Preschool Education Program used and developed by the MoNE (2013) in Turkey is parallel to the NTP in terms of being a developmental program, providing flexibility in organizing the teacher's plan in line with children's needs and interests, being a game, problem-solving, and creativity-based program, and using routines, activities, and transitions as a learning setting. Upon reviewing the literature, it is observed

that there are many studies on the effectiveness of strategies and techniques used in the NTP (Bakkaloğlu, 2008; Christensen-Sandfort & Whinnery, 2013; Fox & Hanline, 1993; Güzel-Özmen, 2005; Kurt & Tekin-İftar, 2008; Losardo & Bricker, 1994; Odluyurt, 2011; Odluyurt & Batu, 2010; Toğram, 2004). There are numerous studies in the international literature on the effectiveness of using the NTP and techniques used in the NTP during inclusive practices (Harjusola-Webb & Robbins, 2012; Macy & Bricker, 2007; Toelken & Miltenberger, 2012). In the national literature, no study was found on the effectiveness of the NTP and the strategies and techniques used in this process in inclusive practices (Sucuoğlu et al., 2015). Research reveals that preschool teachers in Turkey have information needs regarding inclusion (Özdemir & Ahmetoğlu, 2012; Seçer, 2010; Sığırtmaç et al., 2011; Sucuoğlu et al., 2013; 2014; Tufan & Yıldırım, 2013). However, there are few studies that determine what kind of practices preschool teachers perform in inclusive practices and what kind of needs and perspectives they have in the context of the NTP (Özen et al., 2013; Sucuoğlu et al., 2013; 2014). Sucuoğlu et al. (2013; 2014) examined teachers' knowledge levels in six domains, including naturalistic teaching strategies, using the Inclusion Knowledge Test (IKT) in their study. Özen et al. (2013) assessed the instructional processes used by teachers in their classrooms in terms of the Activity-Based instructional principles employed in the NTP. This study was deemed necessary because there are few studies that determine the needs and perspectives of teachers regarding the NTP, which the literature recommends for use in inclusive practices. A successful inclusive practice in the preschool period supports the development of both children with diverse needs and typically developing children (Guralnick, 2001). The teacher and the instructional processes used by the teacher are of key importance for a successful inclusive practice (Kırcaali-İftar & Batu, 2007). In preschool inclusive practices, the NTP is recommended (Copple & Bredekamp, 2009; NAC, 2015; NPDCI, 2009). In this context, it is thought that revealing the views, needs, and suggestions of preschool teachers who have children with diverse needs in their classrooms will contribute to the national and international literature. Furthermore, experts believe it has the potential to shape the content of intervention programs and in-service training programs for use in national practice.

The purpose of this study is to determine the perspectives of preschool teachers who have not received any training on the Naturalistic Teaching Process before and who have children with diverse needs in their classrooms on the naturalistic teaching process (NTP). The present study seeks answers to the following questions: (1) How do preschool teachers who have not received any training on the NTP before and have children with diverse needs in their classrooms plan the intervention? (2) How do preschool teachers who have not received any training on the NTP before and have children with diverse needs in their classrooms carry out the intervention process? (3) How do preschool teachers who have not received any training on the NTP before and have children with diverse needs in their classrooms evaluate the effect of family involvement?

Method

Research Design

The study was designed as descriptive, and a semi-structured interview technique was used to collect data. The research data were analyzed by induction analysis. The research diaries and field notes kept by the researcher were used while analyzing the research data and interpreting the findings.

Participants

The study participants include the first researcher, who graduated from preschool education programs and minor programs in education of the mentally disabled in 2011, as well as teachers who volunteered to be interviewed. In this context, necessary permissions were obtained to conduct the study with teachers working in kindergartens and nursery classes in a city center located in the Marmaramara region of Turkey. Accordingly, the list and contact information of the schools were obtained from the official website of the Directorate of National Education, 9 kindergartens and 3 nursery classes were contacted by phone, and the first researcher explained the study he planned to carry out to the school administrators. A total of 23 teachers from seven institutions, who indicated their willingness to participate in the interview, volunteered. We interviewed a total of 15 teachers based on the prerequisites for their

participation in the study. All of the participating teachers have at least one year of experience with children with diverse needs, and during the study, they had at least one student with diverse needs in their classroom. One of the teachers participating in the study received education at a university in Bulgaria and is an associate degree graduate of the Child Development Program. All other participants are undergraduate graduates. Of the teachers with a bachelor's degree, 11 are graduates of the preschool education program, 2 are graduates of the child development program, and 1 is a graduate of the child development and home economics program. All of the teachers participating in the study are female. The participants' age range varies between 27 and 57, and the mean age is 34. The participants' professional experience ranges between 2 and 26 years, with an average of 10 years. The participants' experience with children with diverse needs varies between 2 and 13 years, and the average experience with children with diverse needs is 4 years. Of the teachers participating in the study, 13 have experience with children with language and speech disorders, 11 with children with intellectual disabilities, 7 with children with pervasive developmental disorder, 5 with children with attention deficit and hyperactivity disorder, 5 with children with orthopedic disabilities, 5 with children with hearing impairment, and 1 with children with chronic diseases. Of the teachers involved in the study, 7 continue to work with children aged 5 years old, 4 with children aged 4 years old, 3 with children aged 3 years old, and 1 with children aged 6 years old. The number of children in the participants' classes ranges from 12 to 24, and the average number of children is 19.

Data Collection Tools

To obtain information about the participants in this study, data were collected using the Demographic Information Form and semi-structured interview questions.

Demographic Information Form

The Demographic Information Form was prepared to provide information about the participating teachers. The form was designed to obtain information about variables such as teachers' age, the field of graduation, professional experience, and gender.

Interview Questions

The interview questions created in line with the literature, observations, and seminars received from experts were prepared in the format of an expert opinion form and sent to six experts via e-mail. The questions were rearranged in line with the opinions of the experts. The prepared questions were sent to six experts to obtain expert opinions for the second time. After obtaining the second expert opinion, the interview questions were arranged. Following a preliminary interview with a teacher, we examined the transcripts from the interviews with two experts and finalized the interview questions. The data obtained in the preliminary interview were excluded from the research data and used only to develop the questions.

Data Collection Process

Semi-structured interview techniques with volunteer teachers were conducted at the schools where the teachers work in their rooms suitable for the interview at the time. The first researcher conducted all the interviews. The first researcher prepared an interview guide to inform participants about the interview's principles before starting the interviews, and then presented the interview to each participant. The shortest interview lasted 34 minutes, the longest one lasted 1 hour, 14 minutes, and the average interview duration was 49 minutes.

Data Analysis

Induction analyzed the study's data (Bogdan & Biklen, 2007; Flick, 2007). An interview coding key was created for each participant based on the generated codes and responses. The researcher met with two experts, shared how he performed the analysis, and obtained their opinion on the interview coding key. By copying and pasting the data and line numbers from the previously coded data file to the appropriate category, the researcher ensured that the data was suitable for the category.

Reliability

Expert opinion was obtained to determine the reliability of the interview coding keys. In the reliability calculation, the codings with agreement were divided by the sum of all codings and multiplied by 100. The average reliability in all categories was calculated as 96%.

Ethical Considerations

This study was supported by the Scientific and Technological Research Council of Turkey (TÜBİTAK) under the 1001 Program (Grant No. 114K164) and the Anadolu University Scientific Research Projects Commission under Project No. 1505E447. Ethical approval was obtained from the Anadolu University Ethics Committee. The Ministry of National Education provided ethical approval in this context. The voluntary participants signed informed consent forms, ensuring confidentiality and their right to withdraw from the study at any time.

Results

Findings were grouped under three themes. These themes are "Preschool Teachers' Perspectives on the Planning Process of the Education to Be Implemented: What Occurs in the Planning Process?" "Preschool Teachers' Perspectives on the Intervention Process: What Occurs in the Intervention Process?" and "Preschool Teachers' Perspectives on Family Involvement in the Education Process: Family Involvement." We present each theme, along with its sub-themes and categories, below.

Preschool Teachers' Perspectives on the Planning Process of the Education to be Implemented: What Happens in the Planning Process?

In the interviews, it was tried to determine how the teachers planned the education they would implement and what kind of planning process they followed for their children with diverse needs. The findings obtained from the interviews were grouped under three headings: "The Ways of Getting to Know and Evaluating the Child," "Planning Made for Children with Diverse Needs," and "Being Aware of the Characteristics of Children with Diverse Needs."

The Ways of Getting to Know and Evaluating the Child

Evaluation is the process of collecting information to decide on the child's development and needs (Kargın, 2013). There are two ways to evaluate: formal and informal. The formal evaluation applies standardized tests. Despite the cost-effectiveness of standardized tests, the emotional states and experiences of children, particularly those aged 3-5 years, can influence them, necessitating informal evaluation support (Epstein et al., 2004). Techniques used in informal evaluation in preschool can be listed as observation, portfolio keeping, teacher evaluation, and family evaluation (NAEYC, 2013; Epstein et al., 2004).

In addition to record-keeping and obtaining information from the family, the teachers stated they mostly made observations to get to know and evaluate children. Taking into account the perspectives of the teachers, Teacher Yonca elucidated their method of evaluating children through observation, stating,

> In my opinion, a good observer can determine this from the way children behave in any environment, from the way they use the toilet to asking for a napkin.

Teacher Nermin clarified this by saying,

> I took a lot of notes during a month. He did it that day. He did this today. …I prepared it by observing one-on-one and taking notes.

Planning Made for Children with Diverse Needs

An Individualized Education Plan (IEP) is a plan that establishes the location, timing, duration, and provider of special education services for children with diverse needs enrolled in general education classes.

It involves mutual agreements between the student, their family, and all educators responsible for their education (special education teacher, general education teacher, counselor, etc.) (Kargın, 2007).

The teachers stated that they prepared an IEP for children with diverse needs and collaborated with the student's family and experts. All of the teachers indicated that they prepared an IEP for their children with diverse needs and described the process of doing so. The teachers said that they mostly needed information during the IEP preparation process. Teacher Sevim said,

> We used to have difficulties preparing an IEP until last year because we did not have much knowledge on this subject.

Teacher Cansu stated,

> I have had many deficiencies in preparing an IEP since my appointment. I completed most of it last year. I have some shortcomings when it comes to preparing the IEP.

Teacher Menekşe expressed her lack of knowledge about IEP preparation in the following way:

> Well, the report we prepared is insufficient because we are incompetent in this.

Being Aware of the Characteristics of Children with Diverse Needs

Teachers must know the strengths and needs of children in their classrooms in order to make appropriate educational and instructional practices for them (NAEYC, 2013). At the planning stage, the teacher should answer the questions of what skills and behaviors children should primarily learn in daily routines, activities, and transitions, and how to teach them (Noonan & McCormick, 2006). In this context, it's crucial for the teacher to understand the strengths and aspects of the student with diverse needs, as well as the activities he enjoys and finds challenging, and adjust their planning accordingly.

Most of the teachers indicated the strengths of their children with diverse needs. Of the teachers who had difficulty expressing their views on their children's strengths, Teacher Cansu said the following for her student with diverse needs:

> No, I can't remember right now.

Teacher Zeyno stated for her student with diverse needs who has Down syndrome,

> He doesn't have many strengths at the moment.

Teacher Derya responded to her student with autism, one of her three children with diverse needs, by saying,

> I can't say anything about him."

On the other hand, Teacher Yonca provided examples of how to use the activities her student with diverse needs enjoyed for teaching purposes to help him achieve his goals:

> … If he didn't want to do it with his hand, I made him do it with his head. I attached a brush to the helmet. Inside a box, we prepared a brush for the helmet and finger paint. He was instructed to insert the brush into his hat and use it to draw on the kraft paper on the wall. He was instructed to draw a picture by moving his head to the left and right, as well as up and down, according to his preference. "In that sense, I found a solution for him, and he loved it. (Teacher Yonca)

Preschool Teachers' Perspectives on the Intervention Process: What Happens in the Intervention Process?

The interviews conducted to understand the teachers' perspectives on the intervention process yielded information about the strategies, techniques, environmental arrangements, and prompts they employed in the NTP, as well as whether their practices incorporated the NTP's features. The obtained data were grouped under two headings, "Strategies and Techniques/Environmental Arrangements/Prompts Used in the Naturalistic Teaching Process That Preschool Teachers Employ" and "Traces of the Characteristics of the Naturalistic Teaching Process in the Intervention Process." The category "Strategies and Techniques/Environmental Arrangements/Prompts Used in the Naturalistic Teaching Process That

Preschool Teachers Employ" consists of the three sub-categories within itself: (a) strategies and techniques, (b) environmental arrangements, and (c) prompts.

Strategies and Techniques, Environmental Arrangements, Prompts Used in the NTP

Among the strategies and techniques in the NTP, the teachers employed activity-based instruction, incidental teaching, being a model without waiting for a response, requesting to be a model, and being a model using extensions (Diken, 2013).

Activity-based instruction is defined as creating learning opportunities for children by embedding functional skills into daily activities (Pretti-Frontczak & Bricker, 2007). Results indicated that most of the teachers included "activity-based instruction" in their practices. Teacher Hadise provided the following examples of her use of activity-based instruction:

> Afterwards, I separate the boys and girls, particularly when washing hands, for routine activities.Also to teach the concept of gender. … You're a girl and I'm a boy; they often struggle to distinguish between the two genders.

Teacher Sevim provided an example of this:

> We assist children who struggle to dress independently during the initial weeks. In addition to this, we have prepared a game for our students. For my class, the dress-up game. They learned it in this way, through play.

Teacher Cansu gave the following examples of using activity-based instruction:

> If I teach a concept related to finding a circle, I pay attention to choosing games accordingly. I primarily engage in activities related to the lesson that day.

More than half of the interviewed teachers incorporated incidental teaching into their practices. Despite not implementing all the steps of incidental teaching in their examples, the teachers evaluated the learning and teaching opportunities to align with the children's needs. In this context, Teacher Mediha demonstrated her awareness of her students' needs by stating,

> I said, 'It's raining. The child approached me in excitement. He cannot pronounce the letter 'R'. So he says, It's laining.

The teacher then responded to the child's interest and clarified that she had successfully completed the engagement step:

> Then I recognized the child's interest and acted accordingly. We went to the garden immediately and practiced a bit by saying, It's rrrraining, rrr (sound).

The same teacher said that she supported the child as a model:

> He also used to have problems controlling his voice. I told him that ants can hear us and whisper to them silently, or we could say, let's say louder so our voices can reach clouds to provide voice control.

Prompts are used to support the skills and behaviors that the child cannot perform independently with physical, model, verbal, and non-verbal aids (Diken, 2013). More than half of the teachers gave examples of using physical prompts. Teacher Firdevs gave examples of the full physical prompt by saying:

> I try to hold his hand. Where necessary, I place his fingers on the scissors' rings. At first, I make his fingers work with my hand.

Teacher Mediha demonstrated the use of the shadow prompt, which is a type of physical prompt, by stating,

> For instance, I'm holding his shoulder. I stand next to him and say, You can do it... By decreasing the degree of help, for example, I just sit next to him and get up from time to time.

Traces of the Characteristics of the NTP

The characteristics of the NTP are listed as follows: (1) the child's lead and interest; (2) using routines, activities, and transitions as a teaching setting; (3) teaching generalization; and (4) an activity/object being a natural reinforcer (Diken, 2013; Pretti-Frontczak & Bricker, 2007).

Interview results indicated that all teachers followed the child's lead and interest. Teacher Rana gave the following example of following the child's lead and interest:

> They saw the playground outside, …Teacher, can we play in the sandpit or park? Since we had enough time, I wanted to stretch today's plan and make them have fun. It is essential for me that they have fun.

Teacher Sevim gave the following example:

> If the child liked something else that day, we include it in the plan immediately and plan accordingly.

Another characteristic of the NTP is the use of routines, activities, and transitions in a teaching setting. All of the teachers stated that they used routines, activities, and transitions in their daily practice. Concerning the use of activities as a teaching setting, Teacher Mediha said the following:

> So, for example, Tuesday is our experiment day. Wednesday is our number day, etc. I plan activities according to these.

Teacher Rana stated that she used activities for teaching purposes in the following way:

> We do our experiment if there is an art activity, a Turkish language activity, or a game activity in accordance with the subject I have determined in advance.

Regarding the use of routines as a teaching setting, Teacher Firdevs provided an example, stating that she used the conversation activity, one of her classes' routines, to support the children's needs:

> When the children arrive at school, we first sit at the table and chat. I ask children how they are doing. We engage in a conversation about the current day, aiming to teach the concept of the day.

Regarding the use of transitions in a teaching setting, Teacher Songül gave examples of how to transform transitions into learning opportunities by saying*:*

> When entering the bathroom line, I count from one to twenty and send them like that.

Preschool Teachers' Perspectives on Family Involvement in the Education Process: Family Involvement

Based on the interviews with teachers, the impact of family involvement in the education process on the child, the families, and the teachers was explored. The findings were organized into three main categories: preschool teachers' views on the impact of family involvement on the child, on the family and on themselves as teachers.

Views on the Effect of Family Involvement on Children

Children learn from people around them, family members, teachers, and peers (Dunst et al., 2006). Experts and families collaborate to support the child's development during inclusive practices (Guralnick, 2001; Kaczmarek et al., 2000).

Most teachers share a positive view on the impact of family involvement in the education process on children. More than half of the teachers stated that families performing activities as class guests made children happy. Teacher Rana expressed this in the following way:

> Children of the families participating in activities become very happy. So when a child's family doesn't come, they get very upset.

Teachers also stated that family involvement in the education process increased children's motivation and contributed to developing children's school belonging. Teacher Begüm expressed that

> the effect is good. Children become more motivated when they think that the family supports them.

Teacher Firdevs expressed as follows:

> With such things, the child both feels school belonging and constantly feels his family's support.

Views on the Effect of Family Involvement on Families

Experts and families should collaborate to identify the child's interests and needs within the NTP framework, and to provide more support for these needs in diverse settings that align with their interests (Horn et al., 2000; Notari-Syverson & Schuster, 1995).

Almost all teachers emphasized that family involvement is critical to acquiring knowledge on the process of the education of their children, while more than half of the teachers stated that family

involvement in the education process raised the family's awareness. Teacher Derya provided the following examples of raising families' awareness through their participation in classroom activities:

> The family pays close attention to the characteristics of the child's age group. Then they learn about his friends, specifically the types of friends he has. The child shares this information when he returns home, but it's more effective when his family visits and observes it. How can we address this issue, specifically targeting the four-year-old age group? You know, what could they do? What can't these children do? The family becomes aware of these. What is their attention span? For instance, they can observe the activities the child finds enjoyable and those he is unable to engage in. Teachers are able to observe the child's interactions with his friends. (Teacher Derya)

Views on the Effect of Family Involvement on Themselves

According to Kesiktaş (2013), the effects of family involvement in the education process on teachers include feeling the support of the family, understanding the difficulties teachers face, and obtaining information about the child. Most teachers think that family involvement in the education process has an effect on increasing the opportunities to cooperate, be supportive, and communicate with families and establishing positive communication. Teacher Cansu explained this situation as follows:

> Besides, the dialogues with the teacher become better. Because the teacher gets to know the parent, the sincerity and warmth between them increase.

Conclusion and Discussion

Consider the study's limitations, such as its small sample size, when interpreting the results. The study includes the opinions of only 15 preschool teachers. The obtained findings were discussed from three aspects: (a) what occurs in planning?, (b) what occurs in intervention?, and (c) family involvement. We then presented recommendations for practice and additional research.

To effectively plan the NTP's inclusion/inclusive practices, teachers should evaluate children in a versatile manner, prepare IEPs for children with diverse needs, and be aware of children's strengths and needs (Copple & Bredekamp, 2009; Macy, 2007; Pretti-Frontczak & Bricker, 2001; Yoder & Warren, 2001). The study observed that the participating teachers primarily utilized informal techniques to understand their children, lacking a standard evaluation process. Teachers may require information on evaluation techniques in order to apply them at various levels and deliver standard education services. The most important condition for the successful execution of the NTP is determining the objectives (Boavida et al., 2014; Dunst et al., 2006; Horn et al., 2000; Pretti-Frontczak & Bricker, 2001). As a result, teachers must evaluate their children using various techniques (obtaining information from the family, observing, keeping records, etc.), determine the child's characteristics, strengths, and needs, and then determine their goals accordingly (Pretti-Frontczak & Bricker, 2001). In this respect, teachers' deficiencies in using evaluation techniques may cause them to have difficulties determining children's needs and determining their goals accordingly. Individualized instruction, IEP preparation, and collaboration with children's families and other process experts are necessary for the successful implementation of the NTP in inclusive practices (Guralnick, 2001; Kaczmarek et al., 2000). Although all teachers said they prepared an IEP, they felt inadequate. It is thought that teachers can express the needs of their students with diverse needs more clearly and precisely; they have difficulties expressing their strengths, and when they are asked to say their strengths, some answers are given by focusing on the needs of children rather than their strengths. Regarding the NTP planning process, it's evident that teachers struggle with evaluation techniques, IEP preparation, goal setting, and collaboration with experts and families. Additionally, we can view the fact that teachers plan activities based on children's preferences and dislikes as a positive aspect of the NTP. Given all these data, we can assert that teachers require professional knowledge and experience in the planning process to effectively implement the NTP in their classrooms during inclusive practices.

Teachers should effectively use strategies/techniques and environmental arrangements for successful inclusive practices of the NTP (Horn et al., 2000; Odom, 2000; Pretti-Frontczak & Bricker, 2007; Snyder et al., 2015). Teachers have the opportunity to demonstrate their use of various strategies, techniques, prompts, and environmental arrangements from the NTP during the intervention process. This demonstrates their professional competence, even in the absence of prior NTP training. This also shows

that the NTP is suitable for the preschool education curriculum. It is believed that teachers are highly aware of the characteristics of the NTP during its implementation, particularly when it comes to following the child's lead and interest. While teachers often use activities as a teaching setting, it's worth noting that fewer teachers utilize routines and transitions. It's important to support teachers in utilizing routines and transitions, as well as generalization and natural reinforcement, which are key characteristics of the NTP.

Family involvement in the education process is defined as their participation in school activities and programs, as well as their communication with children about the school and the home environment that supports learning (Fan, 2001). The teachers asserted that family involvement in the education process facilitated their collaboration with the families, fostering a supportive environment, enhancing their communication with the family, providing them with information, understanding the family's traits, understanding the challenges the teachers faced, and highlighting the family's complicating influences. However, two teachers stated that family involvement in the education process had complicating effects, just as in the study conducted by Sucuoğlu et al. (2013; 2014), which shows their deficiencies in working with families.

Recomandations for Practice

- By providing them with a preservice practice-based course on special education, we can ensure that preschool preservice teachers make an evaluation, prepare an IEP, and use instructional techniques and prompts.
- Assigning special education teachers to preschool institutions can provide support for the challenges preschool teachers face with their children with diverse needs during the intervention process.

Recommendations for Further Research

- We can design qualitative research based on observation or video analysis to ascertain the strategies and techniques used by NTP preschool teachers, the activities they engage in, and the duration of their use.
- By providing coaching support, single-subject research can be carried out on the effectiveness of preschool teachers' use of the strategies and techniques, environmental arrangements, and prompts used in the NTP.
- Given the shortcomings of preschool teachers in working with families, it is possible to develop a training program that will improve their interactions with families and investigate its effectiveness.
- Preschool teachers need information about various disability groups, so we can prepare a training program on this topic and investigate its effectiveness.

Declarations

Authors' Declarations

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Research Article

Enhancing playful interactions: eCoaching mothers of preschool children with disabilities

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Abstract: Pretend play is crucial for developing communication and cognitive skills in preschool children. Targeted coaching during pretend play can effectively support family-centered practices and home-based assistance. This study employed a detailed collective case study to explore how eCoaching can aid family-centered practices during at-home pretend play for children with speech-language and developmental delays. Two mother-child pairs, each involving a preschool child with an Individual Education Plan (IEP), participated in at-home eCoaching sessions while engaging in pretend play. Implementing eCoaching helped mothers acquire play-based knowledge and better facilitate pretend play tailored to their child's developmental needs. Throughout the eCoaching process, improvements were noted in the children's quality of pretend play and language behaviors. After the eCoaching sessions concluded, both mothers and children experienced benefits from the process. The mothers had positive perceptions of their eCoaching sessions, found them easy to implement, and considered eCoaching beneficial for themselves and their children. This indicates that eCoaching is a socially valid family-centered practice. Future research should investigate how individual variables associated with the eCoaching influence child and family outcomes.

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Introduction

Theoretical Foundations and Play-based Learning

The centering of play-based learning is integral to early childhood educational practices, especially since play mediates cognitive, social, and language development (Bergen, 2002). Theorists have identified pretend play as an influential mediator of various developmental areas in young children (e.g., Vygotsky, 1978). Vygotsky highlights pretend play opportunities as crucial for developing young children's learning as they apply real-life ideas to non-literal contexts. Non-literal play behaviors that define pretend play can differ across materials and behaviors (Barton, 2016). Non-literal pretend play behaviors comprise play involving symbolism, persistence through imagination, and role-play scenarios, which require adherence to social rules (Loizou, 2017). The adherence to rules and utilizing internal representations during pretend play episodes are associated with self-regulation development (Savina, 2014). Non-literal ideas through shared materials also reveal opportunities for communication skills when others are involved in pretend play interactions. According to the Vygotskian perspective of play, when children assume roles during pretend play or use object substitutions for materials, they employ behaviors that increase their understanding of expression regulation and social norms (Elias & Berk, 2002; White et al., 2021).

Outlining the complexity of pretend play, Barton and Wolery (2008) categorize it into four types: 1) functional play with pretense, 2) sequencing, 3) substitution, and 4) confirmatory verbalizations. The substitution category includes specific actions such as object substitution (OS), imagining absent objects (IAO), and assigning absent attributes (AAA) (See Table 1). In social pretend play, non-literal ideas and materials necessitate communication skills for effective interaction with others. This type of play involves two or more individuals' verbal or non-verbal acknowledgment of roles or object substitutions and the joint

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planning of complex scenarios (Thompson & Goldstein, 2019). When children play pretend with peers, they share ideas and non-literal thinking to create a shared experience, such as assuming roles and determining the sequence of events. The research underscores the role of pretend play in promoting various skills. It aids language and communication development (Kızıldere et al., 2020), vocabulary acquisition (Hutagalung et al., 2020), and also emergent literacy (Nicolopoulou et al., 2015). Additionally, pretend play supports the development of communication skills, routine conversations, and oral vocabulary (Taylor & Boyer, 2020). Thus, pretend play is a valuable avenue for children's learning due to its complex nature.

Table 1. Pretend play taxonomy

Category of Pretend Play	Definition	Example from Study
Functional Play with Pretense	Utilizing objects in a way that mimics their actual use or suggests a realistic outcome.	Eric used a pretend cookie to serve to his mom when playing restaurant. Oliver used an old keyboard to act out an office play scenario.
Object Substitution (OS)	Using an object in a different way than it may have been intended.	Oliver used blocks as a "fence" when playing zoo.
Imagining Absent Objects (IOA)	Acting in a way that implies the intended object is present when it is not.	Eric held out his hand to receive "money" from his mother ordering food at his "restaurant."
Assigning Absent Attributes (AAA)	Assigning emotions or roles to oneself, inanimate objects, or others within play scenarios.	Oliver assigned roles to himself as an "office worker" and his mother as the "visitor."
Sequences	A series of two or more functional actions of play with pretense or substitution behaviors that follow a consistent theme, story, or routine.	Oliver led a tour of his "office building" using figurines. Eric worked with his mom to save a "city" using superhero figurines.
Confirmatory Verbalizations	Language used during play to communicate what is being acted out (e.g., roles, emotions, planning ideas)	Eric told his mother his action figure was "shooting out lightning."
Vocabulary	Use of term that is associated with what is being acted out.	Oliver used the terms "patient" and "doctor" when engaging in a hospital scene.

Note. Categories and definitions adapted from Barton and Wolery (2008).

According to Vygotsky (1978), within the social and internal planes, the avenue to higher mental functioning planes is deemed the "zone of proximal development" (ZPD). Within the ZPD, young children's skills can be represented in what can be performed independently and with help. When help is provided, children can increase their functioning and build competence. Within Vygotsky's framework, children's caregivers are seen as more knowledgeable and instruments in steering, making connections, and challenging the child's learning. Knowing when and how to support a young child during play requires a combination of observation and purposeful support within their ZPD.

Adult-child play interactions can be understood through the integrated, responsive play intervention model (Trawick-Smith & Dziurgot, 2010). This model seeks to balance a child's independent, self-directed play with adult engagement to promote development and learning tailored to the child's needs. In this approach, an adult observes a child's play behaviors and decides on an appropriate response based on the behaviors observed (e.g., engagement, enrichment, technical support). An interaction is considered a "good fit" when the child accepts the adult's support as meeting a need or improving their play behavior. Effective adult involvement in a child's play includes suggesting ways to expand play themes, resolve conflicts, introduce new vocabulary, and encourage cooperation (Bodrova & Leong, 2007). Conversely, a "poor fit" occurs when the adult's response does not align with the child's needs or is rejected by the child. The next step involves the adult observing the child to determine the type of support (e.g., attention, knowledge) or enhancement (e.g., vocabulary) that may benefit them.

Literature of Play and Children with Disabilities

Research has consistently demonstrated that play is a critical avenue for supporting the

developmental competencies of children with developmental disabilities, such as communication and joint attention. Various interventions, including least-to-most prompting, have shown mild to moderate progress in object substitutions (Lee et al., 2020) and appropriate functional play (Pullum et al., 2020). Adult modeling has been identified as a way to enhance young children's manipulation of items or functional play (Gmitrova, 2013; Kalkusch et al., 2021) and imitation (Ingersoll & Schreibman, 2006). Additionally, researchers have noted that caregivers who follow a child's lead using the least invasive prompt procedure and incorporate developmentally appropriate activities during play at home can enhance the child's ability to generalize skills within age-appropriate activities (Lifter et al., 2005, Quigley et al., 2018). These interventions illustrate that pretend play skills can be intentionally supported, thereby giving children with disabilities better access to the developmental benefits of play.

The effectiveness of these play-based interventions is further amplified when delivered through a family-centered approach. Studies have demonstrated that caregivers can be guided to implement play-based interventions through coaching (e.g., Miller-Kuhaneck & Watling, 2018). Research indicates that when caregivers actively participate in their child's daily routines, such as play, children exhibit improved outcomes in early childhood learning domains (Mahoney, 2009). Caregiver involvement in early learning experiences promotes play at home, aligning with family-centered practices by incorporating individual family values and interests within a sociocultural play environment.

Family-centered partnerships are fundamental to early childhood education, especially for students with disabilities. In the United States (US), the Individuals with Disabilities Education Act (IDEA, 2004) recognizes caregivers as essential in supporting children with disabilities. Professional organizations, such as the Council for Exceptional Children's Division for Early Childhood (DEC), emphasize practices that are "family-centered" in their recommended guidelines for early childhood special education providers (DEC, 2014). Various terms (e.g., family-friendly, family-oriented, family-centered care, child-centered) have been used in the context of early childhood education. In the US, the early childhood special education field frequently utilizes the term "family-centered." For the duration of the paper, the term "family-centered" will refer to practices and partnerships that position individual family values and priorities while supporting their child's outcomes. These practices promote building self-efficacy in families supporting children with disabilities (Ogourtsova et al., 2019).

Family-centered practices involve recognizing the child's needs, learning opportunities, interests, and desired activities while enhancing the caregiver's skills to enhance their support and boost self-efficacy (Frugone-Jaramillo & Gràcia, 2023; Knoche et al., 2012). Family collaboration at this level involves participants as co-equals engaged in shared decision-making toward a common goal (Friend & Cook, 1990; McWilliam, 2010; Friend & Cook, 1990). The objective of a family-centered framework of collaboration for early childhood is to offer caregivers chances to affirm their skills and boost their confidence in identifying appropriate learning outcomes within everyday activities, recognizing their child's developmental interests and needs, and developing their abilities and skills to support the child's growth while aligning with the values of the family (Knoche et al., 2012).

One way educators have embraced family-centered practices is through collaboration via coaching. Coaching caregivers utilize various adult learning strategies to improve their capacity to support their child's development while engaging in everyday routines, activities, and situations (Rush & Shelden, 2020). This systematic process, built on a collaborative relationship between coach and caregiver, involves (a) setting goals, (b) promoting self-directed learning, (c) creating strategies designed to achieve the established goals, and (d) fostering personal growth (Rush & Shelden, 2020). Consequently, family-centered interventions have shown increased implementation fidelity (Kemp & Turnbull, 2014), improvements in child performance (Miller-Kuhaneck & Watling, 2018), increased self-efficacy, and decreased caregiver stress (Ogourtsova et al., 2019).

The involvement of families in the education of young children with disabilities aligns with the sociocultural theory of development, which underscores the influence of the cultural environment on cognitive and social development (Göncü & Gauvain, 2012; Rogoff & Angelillo, 2002). Underscoring this

perspective is the culture and context in which learning and development operate (Rogoff, 2023). Three key elements are related to the sociocultural perspective on pretend play (Göncü & Vandeboncoeur, 2017). First, cultural values, either implicitly or explicitly set, dictate who participates in play and when and how they do so. Second, child development and learning are mediated by the culturally specific ways children engage in pretend play, shaped by the norms and expectations of their cultural background. Lastly, meaning is constructed in relation to others, such as caregivers and siblings, influencing the interpretations made during pretend play. Incorporating families and their sociocultural environments into play-based learning is crucial, as these factors shape the beliefs, interests, and perceptions of play among caregivers and children. Cultural values not only define play (Rentzou et al., 2019) but also determine its significance in the development of young children (Roopnarine & Davidson, 2015). Therefore, the expression of play behavior, particularly the enactment of roles and scenarios in pretend play, is deeply rooted in the family environments where children live.

Facilitation by families can address play discrepancies and promote specific developmental areas while considering a sociocultural perspective. With the increase of virtual learning starting in 2020 because of the pandemic, virtual coaching models are becoming increasingly viable for family-centered practices (Gomez et al., 2022). Studies have demonstrated positive outcomes for both caregivers and children through virtual coaching (Aguilar et al., 2023). Additionally, caregivers have reported high satisfaction and positive results from participating in coaching sessions, whether virtual or on-site (McDuffie et al., 2016). During the shift to remote services, families found that they could build better relationships with providers, and services became more individualized to meet their child's needs (Steed et al., 2022). Virtual family support has shown increased benefits, especially for families facing transportation obstacles (Keder et al., 2022; Steed et al., 2022). As a result, virtual coaching models enhance developmental outcomes and provide flexible and accessible support for families.

Present Study and the Use of Virtual Coaching

Engagement in pretend play is particularly important for preschool children (ages 3-5) as they tend to gravitate toward higher levels of imaginative play during these years (Singer & Singer, 1990). This study investigates a virtual coaching model, eCoaching, as a family-centered intervention for preschool children with disabilities, utilizing pretend play as a key component. The increased accessibility of technology and the shift to remote service delivery have led to a rise in the use of virtual coaching models. This study aimed to use eCoaching to support mothers of children with disabilities to facilitate learning through pretend play at home. Coaching activities included observation, reflection, and feedback (Fixsen et al., 2005). In addition, adult learning principles were also incorporated (i.e., Trivette et al., 2009). All sessions used a virtual coaching model that relied on video conferencing and email. This study aimed to address the following research questions as related to mothers' preschool-aged children with identified disabilities:

1) How does eCoaching impact mothers' understanding of how their children learn through pretend play?
2) How does eCoaching assist mothers in facilitating their children's learning through pretend play?
3) Do the characteristics and quality of pretend play behaviors in children change when their mothers receive eCoaching?
4) Do mothers perceive eCoaching as a socially valid family-centered practice?

Method

The study utilized a collective case study design, focusing on two mother-child pairs (Creswell & Poth, 2018) in a large US city and underwent an Institutional Review Board (IRB) approval. All participants provided consent before the start of eCoaching, and all data collected was confidential, with no identifying information stored after the data was analyzed. Operating in everyday contexts and settings, case studies examine several sources of information to provide in-depth descriptions of cases at an individual and collective level (Yin, 2017). As eCoaching relies on replicated procedures within coaching, it is an ideal

intervention for a collective case study design. The two mother-child pairs also demonstrated overlapping characteristics, making them suitable for a collective analysis. Further, as a newer medium of support, utilizing a case study design allowed for a detailed exploration of pretend play-based eCoaching through in-depth descriptions.

Recognizing the positionality and reflexivity of researchers is crucial in qualitative research (Trainor & Graue, 2014). The first author is a White female with seven years of experience teaching special education and five years as an instructional coach in US public schools. The second author is a foreign-born Hispanic female with four years of teaching experience in early childhood and elementary classrooms, and she has directed an early childhood special education teacher preparation program in the US. Both authors have extensive experience working with diverse families. We acknowledge that our backgrounds and experiences have influenced our perspectives during data analysis, shaped by our various roles in the US education system. Our frames of reference underwent critical analysis during data collection and interpretation (Merriam, 2009). By sharing our positionality and reflexive practices, we enable readers to assess any potential bias that may have impacted the investigation.

Study Participants

Two caregiver-child pairs consented to participate after being recruited via emails shared with early childhood professional organizations in the US. The mother-child pairs lived with their partners in a large midwestern city in the US. Caregiver-child pairs were eligible to participate if their child (1) was between 3 and 5 years of age and not eligible for enrollment in kindergarten, (2) had a current Individual Education Plan (IEP) for a disability identified through an IDEA assessment process, and (3) spoke English as their primary home language. In addition, caregivers needed access to the internet and technology with video conferencing. The first two pairs, who expressed interest in participation, met eligibility criteria, and completed their consent to participate, were included in the study.

Both participating caregivers were mothers and former educators with advanced degrees. Allison and Lisa were stay-at-home mothers of two sons, Eric and Oliver (4.5 years); see Table 2. Due to the COVID-19 pandemic, both children who had IEPs for speech-language delay (SLD) received speech services remotely. Allison's son Eric was also identified as having a developmental delay (DD). Eric qualified for public preschool services, but his mother elected to homeschool him temporarily due to concerns related to the pandemic. Lisa's son Oliver was attending a half-day private preschool in addition to his virtual speech services. Both mother-child pairs were families of four: a father, a mother, and two sons. Eric was the oldest sibling, whereas Oliver was the youngest in his household. A single coach (lead author) was used across pairs during the eCoaching model to control potential provider-related influences. The coach had five years of experience as an instructional coach, a master's in special education, and six years as an early childhood special education instructor.

Table 2. Mother-child pair demographics

Mother and Child	Mother				Child			
	Ethnicity	Gender	Highest Degree	Background	Ethnicity	Gender	Age	Disability
Lisa and Oliver	White	F	Masters	Previous teacher; stay-at-home mother	White	M	4.5	SLD
Allison and Eric	White	F	Masters	Previous teacher; stay-at-home mother	White	M	4.5	DD SLD

Note. DD = developmental delay; SLD = speech-language delay; M = male; Names provided are pseudonyms.

eCoaching Procedures

The eCoaching intervention occurred through Zoom™ video conferencing, phone conversations, and email (Passmore & Hughes, 2024). The eCoaching began with a phone pre-interview with each mother

conducted by the coach to gather information on their background, child's play preferences, play behaviors, and mother's knowledge of pretend play characteristics. Following the interview, six eCoaching cycles occurred virtually in the mother's homes, where the coach engaged in observation and debriefing via Zoom™ video conferencing (see Figure 1). An eCoaching cycle consisted of a 10-minute virtual observation, debrief featuring goal setting, recap email, and a minimum of five days for mothers to support the implementation of set goals. The observation period was set at 10 minutes, allowing sufficient time to collect data for the subsequent debrief conversation. Sessions included only the play materials typically used by the family. These materials included blocks, action figures, animal figurines, a wooden train set, and pretend food for the two children.

A debrief conversation immediately followed each observation. During the debrief conversation, the coach and mother discussed their shared observations, developmental goals, and the intervention(s) used to address those goals. Allison desired to increase Eric's use of language and vocabulary during pretend play and identified modeling and prompting as avenues for facilitating these behaviors. Lisa also selected prompting strategies to enhance her son's use of complex play (e.g., AAA, OS) while incorporating emerging academic skills (e.g., writing, letter identification). Debrief conversations followed procedures outlined by Knight and colleagues (2015), with additional time spent building relationships and trust with mothers (see Figure 2). The debrief focused on conversations around shared observations to promote goal setting, where the coach facilitated Allison and Lisa's self-efficacy through questioning and discussion. An outside researcher with experience in coaching conducted fidelity checks on 25% of debriefs, resulting in 98% fidelity to ensure protocol adherence. After each virtual debrief, the mother received a summary email outlining the discussed goals and information for the next coach-caregiver cycle. Alongside the six eCoaching cycles, the mothers collected home video samples of their children's independent play, consisting of five 10-minute videos taken at pre-, mid-, and post-intervention stages. These videos were shared with the coach via a secure online system to provide additional data for the debrief conversations. Upon completing the six eCoaching sessions, an interviewer who had not previously interacted with the families conducted a final phone interview. This interview aimed to gather the mothers' understanding of pretend play, their facilitation of learning through pretend play, and their perspectives on the social validity of the eCoaching model.

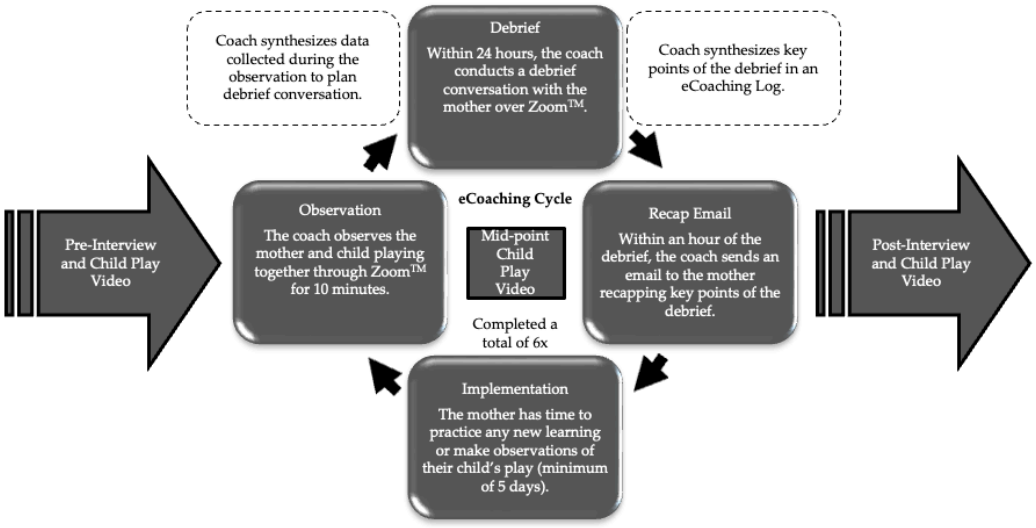

Figure 1. eCoaching Procedure

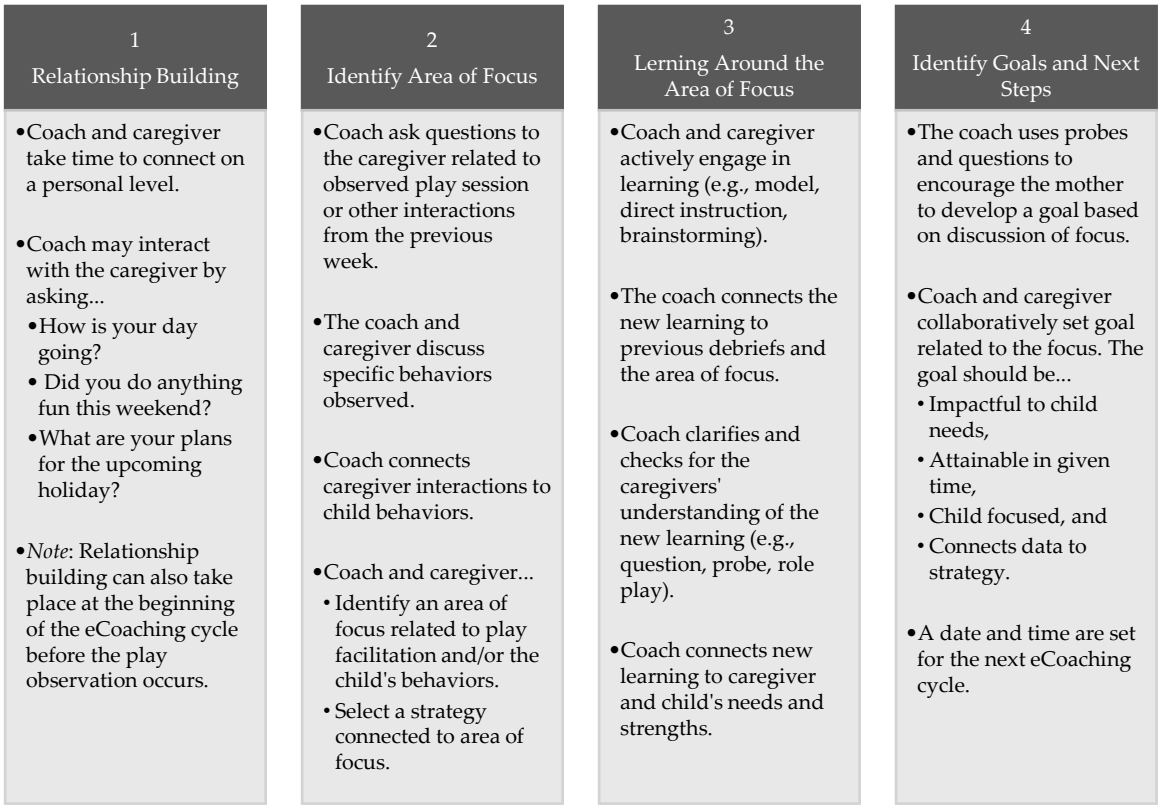

Figure 2. eCoaching debrief procedures

The eCoaching intervention occurred over 35 days for Allison and 39 days for Lisa. Enrollment included the time needed to conduct a pre- and post-interview. Each mother preferred to meet weekly, with some discrepancies for weeks that overlapped holidays. On average, debrief conversations lasted 22 minutes (range 14-36 minutes). To accommodate the mothers' convenience, virtual observations and debriefs were arranged at times and dates that fit their schedules.

Data Collection

Interviews and eCoaching Logs

Pre- and post-interviews, focusing on family dynamics, the child's play characteristics at home, and perceptions of pretend play and coaching, were conducted as semi-structured phone interviews (Allison: 55 min, Lisa: 60 min). These questions aimed to understand the mothers' perspectives on developmental benefits, play characteristics, and personal facilitation styles when engaging with their children during play. The post-interviews (Allison: 27 min, Lisa: 34 min) included questions adapted from Allen and Nimon's (2007) professional development evaluation survey and Johnson et al.'s (2016) Coach-Teacher Alliance measures, using a 5-point Likert scale format to assess the social validity of eCoaching as an intervention (see item of focus in Table 3). Both tools have been validated as reliable measures for evaluating professional learning. Interview data was audio-recorded, transcribed, and member-checked to ensure accuracy. To avoid potential bias, a researcher not involved in the eCoaching cycle implementation conducted the post-interviews, while all eCoaching debrief conversations were video and audio recorded. After each debrief, key points such as goals, shared resources, and next steps in facilitation strategies were summarized in an eCoaching log spreadsheet to gather quantitative code values and synthesize the progression of eCoaching.

Table 3. Mothers' self-assessment Likert scale ratings following eCoaching

Dyads and Categories	Lisa	Allison
Content	**4.7**	**5**
The coach covered the topics in sufficient detail.	4	5
My understanding of the facilitation of pretend play with my child PRIOR to eCoaching.	4	4
My understanding of the facilitation of pretend play with my child AFTER to eCoaching.	5	5
My ability to apply concepts to an actual problem or situation in the area of pretend play facilitation with my child PRIOR to eCoaching.	4	3
My ability to apply concepts to an actual problem or situation in the area of pretend play facilitation with my child AFTER to eCoaching.	5	5
Working Relationship	**5**	**5**
The coach and I trust one another.	5	5
The coach was approachable.	5	5
The coach showed a sincere desire to understand my family and support my child.	5	5
Dyads and Categories	**Lisa**	**Allison**
eCoaching Process	**5**	**5**
The provided support that matched the needs of my family.	5	5
The coach provided me with practical and useful feedback and strategies.	5	5
Investment	**5**	**4.5**
The time spent working with the coach was effective and productive.	5	5
I would recommend eCoaching to another caregiver.	5	4
Benefits of eCoaching	**4.5**	**5**
My child benefited from my work with the coach.	4	5
The coach had a positive impact on my child's play behaviors.	5	5

Note. Items adapted from the professional development evaluation survey (Allen and Nimon, 2007) and Coach-Teacher Alliance measures (Johnson et al., 2016); 1 = *very poor*; 2 = *poor*, 3 = *acceptable*; 4 = *good*; 5 = *excellent*

Play Observations

Observation data was collected in two main ways. Firstly, through mother-child interactions during their play sessions. These interactions, focusing on play facilitation, were observed during 10-minute sessions conducted over Zoom™ as part of the eCoaching procedures (n = 6). The play observations served two purposes: informing the eCoaching debrief conversations and documenting the mother's play facilitation over time using an adapted version of the integrated, responsive model of play intervention (Trawick-Smith & Dziurgot, 2010). Interactions between mother and child were coded as 'good-fit' or 'poor-fit' based on the child's response, with subcategory coding for antecedent and consequence behaviors (i.e., child need, child response, adult behavior).

Secondly, children's play behaviors were observed independently five times for each child. Mothers were asked to collect naturally occurring home videos at pre-, mid-, and post-intervention stages during the eCoaching sessions. Also, to help control for potential bias in the mothers' selection of a video, two additional instances of a child's play behavior were taken from the mother-child interaction videos during eCoaching after the pre- and post-mother-provided videos. At least a week occurred between each child's play observations. These play observations were coded using a 10-second interval recording with an adapted version of the Play Observation Scale (POS-A) (Rubin, 2001) and using pretend play taxonomy (Barton & Wolery, 2008). This tool assessed cognitive play (i.e., functional, exploratory, construction, pretend, and games-with-rules) and social play (i.e., solitary, parallel, group). When pretend play was observed, secondary codes aligned with the pretend play taxonomy behaviors (Barton & Wolery, 2008).

Coding of facilitated play interactions and the POS-A incorporated interrater agreement (IOA) for 33% of observations across mother-child pairs. Two doctoral students with experience as early child educators and researchers were utilized for each observation tool. The training was carried out using videos of caregiver-child pairs who were not part of the study, with maintenance training conducted midway through data collection. IOA reached 96% for facilitated play interactions, with 97% agreement for additional subcategories. An overall agreement of 92% was achieved on the POS-A data across all

categories represented in the POS-A.

Data Analysis

The data was first prepared and analyzed individually for each mother-child pair before a collective analysis was conducted across pairs. Throughout the eCoaching process, researchers engaged in ongoing data analysis, utilizing field notes and memoing to identify initial trends. Individual case information was thoroughly read, viewed, and examined to understand the details specific to each mother-child pair (Creswell, 2009). The analysis involved qualitative, descriptive, and visual examination of each pair across all instruments. Following the individual analyses, a cross-case analysis was performed. This analysis applied pattern matching to account for all collected evidence and support plausible internal validity explanations (Yin, 2017). The data analysis followed an ongoing, interrelated, and simultaneous process that included 1) organizing and managing data, 2) reading the data and memoing emergent ideas, and 3) describing and classifying codes into themes (Creswell & Poth, 2018). Sub-category codes (e.g., "mom connects to child's interest," "mother connects to taxonomy") were consolidated into major themes (e.g., "connections"). These themes were organized into a codebook with definitions and examples. Frequency and duration data were extracted from the qualitative data to quantify these themes. Finally, the fidelity of the eCoaching procedure and each research question were matched across the mother-child pairs, aligning with the theory that eCoaching would positively impact these variables.

Findings

Research Question 1: Mothers' Acquisition of Knowledge

During their pre-interviews, Lisa and Allison identified the sources they relied on to develop their parenting knowledge. Allison preferred social media accounts, while Lisa leaned towards parenting books or professional development provided by her son's preschool. Both mothers also mentioned reaching out to peers with similarly aged children. During eCoaching, a key strategy for constructing new learning about play was the mothers' ability to connect their background knowledge and experiences with their children. These instances were coded as "connections" during debriefing conversations for both Lisa (n = 22) and Allison (n = 13). For instance, Lisa related the "integrated, responsive model of play intervention" (Trawick-Smith & Dziurgot, 2010) to leading discussions in her work as a high school teacher. Allison referenced Vygotsky's "zone of proximal development" (Vygotsky, 1978) when discussing prompting strategies. "Connections" were also made to previous play observations. For example, when discussing the role of assigning absent attributes in pretend play, Lisa linked the concept to a game her son Oliver enjoyed playing, "dog catcher," where children alternated parts.

During eCoaching, Allison and Lisa increased their participation in debriefs by contributing to play observations made inside (n = 52; Allison = 24, Lisa = 27) and outside (n = 18; Allison = 8, Lisa = 10) eCoaching sessions. These contributions were coded as "sharing" and demonstrated their efficacy in leading conversations and engaging in responsive problem-solving. "Sharing" is a crucial element of eCoaching and relates to the establishment of eCoaching goals for routine implementation (Knight et al., 2015). Additionally, "sharing" helps Allison and Lisa boost their self-efficacy in supporting their sons' developmental needs through play. For instance, while observing the pretend play behavior of assigning absent attributes (AAA) of emotion, Allison identified how Eric would "kind of… do the emotions. Like 'errr!', but not necessarily saying I am mad." This discussion led to a goal of prompting more specific language with Eric during these play scenarios.

Mothers collaborated on setting goals by making suggestions about their family routines and their child's preferences. This collaboration occurred in the first session for Lisa and session two for Allison. Allison also showed an ability to generalize goals for her son to other behaviors or types of play (e.g., games-with-rules). Lisa noted her son's affinity for seeing his dad work from home and provided "office materials" Oliver could use to pretend play "office." Similarly, Allison adapted the idea of play planning (Craig-Unkefer & Kaiser, 2002) to meet the needs of her family by prompting a play plan conversation on the walk home from the park. The intention behind Allison's facilitation of play planning was to promote

advanced pretend play verbalizations and sequencing in her son, Eric. In the final session, both mothers outlined specific goals related to pretend play that they planned to use beyond the six eCoaching sessions.

Following eCoaching, Allison and Lisa deepened their understanding of the developmental benefits of pretend play for their children. This enhanced understanding was directly linked to the individual goals set for each mother-child pair. Allison noted that moving beyond fighting behaviors in play provided more language opportunities for Eric. Lisa explored how Oliver's natural interest in pretend play could be integrated with academic activities, such as writing and language. Both mothers also emphasized pretend play's role in supporting expressive communication and vocabulary development, aspects they had not mentioned in their pre-interview.

Research Question 2: Mothers' Role in Facilitating Pretend Play

The mothers efficiently resolved conflicts and enriched play scenarios through increased 'good-fit' interactions while engaging in pretend play with their children. Allison and Lisa maintained a high percentage of 'good-fit' interactions during eCoaching, potentially due to their educational backgrounds. Both mothers, however, increased their ratio of enrichment opportunities through interactions coded as opportunities to enhance pretend play. Most of these enrichments aligned to language and vocabulary when playing with their sons. For example, Lisa was able to offer suggestions for explorations of writing with Oliver through (a) making a map for a pretend zoo, (b) making signage for a hotel, and (c) making business cards to use when playing office. By contrast, Allison aimed to support Eric's use of expressive communication by expanding his pretend play scenarios and language opportunities via a version of play planning (Craig-Unkefer & Kaiser, 2002). She also spent time observing Eric's natural inclinations, providing scaffolding via questions or modeling (e.g., "Baby, where are you going?"; "We have to save the city"). Regarding language, the most common form of indirect support involved encouraging Eric to elaborate on words such as "there," "here," and "this." For instance, Allison encouraged Eric to use specific vocabulary while building a structure by asking, "What are you putting there?" Eric answered with the word "roof." This prompt enabled Eric to practice descriptive language in identifying object substitution (OS) instances. Both mothers discovered that these opportunities allowed them to scaffold learning while leveraging their children's intrinsic interests in pretend play.

Allison and Lisa recognized the importance of taking a more intentional role in their child's play as a significant area of personal growth following eCoaching. In pre-interviews, both mothers described adopting a bystander role during their children's play because they needed to "multi-task" (e.g., cleaning, making dinner, taking care of a sibling). Although the need to "multi-task" was still expressed in post-interviews, both mothers wanted to be more "intentional" while their sons played. Regarding language goals, Allison intended to be "more intentional with what I am trying to get out of him during play." Similarly, Lisa wished to "seamlessly jump in and add an element" to enhance her son's play. These reflections demonstrate Allison and Lisa's ability to move beyond being passive observers, finding ways to intentionally support learning through pretend play in a manner that fits into their family's daily routines.

Research Question 3: Children's Pretend Play Behaviors

Eric and Oliver preferred using blocks and figures during pretend play. Oliver also incorporated more scenario-based roles, such as soldier and office worker. Throughout eCoaching, both children showed increased behaviors related to the pretend play taxonomy (Barton & Wolery, 2008), as detailed in Table 4. The table shows instances when the mother was actively engaging or invited to participate on the outskirts of the play. The children demonstrated the most significant increase in their ability to assign absent attributes (AAA), with Eric initially showing no AAA behaviors before eCoaching. Oliver's AAA interval behaviors increased dramatically from a low of 5% to a high of 72%. Moderate increases were observed in pretend play sequencing behaviors, with Eric showing the most substantial growth. There were variable changes in the use of verbalizations. Eric's verbalizations were more pronounced when his mother was present, although his growth in this area was less evident than Oliver's over time. Both mothers noted that their child's vocabulary increased during pretend play due to eCoaching. Across participants, no notable changes were seen in imagining absent objects (IAO) or object substitution (OS). The ability to observe IAO

and OS behaviors could be limited due to their tendency to occur primarily in the child's imagination. Additionally, OS was observed more frequently (accounting for 100%) when building materials were included in the child's pretend play.

Table 4. Child play behaviors on the play observation scale (POS-A)

Individuals	Oliver					Eric				
Observations	**1**	**2***	**3**	**4***	**5***	**1**	**2***	**3**	**4***	**5**
Pretend Play Behaviors	37	40	59	54	46	55	45	34	42	48
Verbalizations	16	23	31	21	41	7	39	21	29	12
Vocabulary	2	8	5	5	16	0	13	1	5	3
Functional Play	10	19	45	6	1	51	0	1	0	32
AAA	3	9	0	15	43	0	42	33	35	38
IAO	11	0	0	22	2	0	24	0	2	0
OS	24	23	0	14	1	0	0	0	38	0
Sequences	31	0	44	8	42	7	42	33	38	43

**Note*= Observations in which the child was playing with their mother

Following eCoaching, Allison and Lisa shared their children's enjoyment of the time spent playing together. Lisa noted, "[Oliver] would cherish the times, and so did I. I think I'll probably incorporate a couple more sessions of times during the week where I could sit down and intentionally play with him more than I did before." Allison repeated this sentiment: "Eric thought it was fun!" The children's fondness for having their mothers as play partners was evident in post-observation videos meant to capture independent play, as all children found ways to discuss and verbalize their play behaviors with their moms.

Research Question 4: Social Validity of eCoaching as an Intervention

As indicated by the post-interview Likert questions (see Table 3), the coach-mother relationship was a satisfying component of the eCoaching process for Allison and Lisa. When discussing this relational aspect, Lisa remarked, "I think it was just good to feel like you had somebody else on your side to give you advice and feedback." Mothers reported an increased sense of their "ability to apply concepts to an actual problem or situation in the area of pretend play facilitation." Regarding the eCoaching process, both mothers expressed high satisfaction with the support provided and how it met their families' needs. While they saw their children benefiting from eCoaching, Lisa felt she was the "greater beneficiary" of the process, as it provided her with "useful feedback and strategies." In their post-interviews, Allison and Lisa mentioned feeling isolated due to being stay-at-home mothers and saw eCoaching as supporting their development as parents. Lisa appreciated the targeted and specific feedback from eCoaching, which she found lacking in previous learning activities (e.g., readings, school-based professional development). She stated, "I liked to have [the coach] watch while we played and then report back. It was interesting that she was able to pick up on stuff I was not. That I had not really been thinking about." Both mothers would recommend eCoaching to other caregivers. However, Allison noted that some caregivers might be challenged with the coaching process due to the open-ended nature of setting goals and receiving feedback during debriefing sessions.

Conclusion and Discussion

As a means of caregiver support through play, eCoaching demonstrated the potential to address caregivers' goals for their child with a disability within various developmental domains through pretend play. Mothers identified the supportive relationship with the coach as a valued factor and source of encouragement provided during eCoaching. The significance of interpersonal coaching skills in achieving family-centered outcomes is underscored by the demonstrated relational trust and participatory responsiveness in eCoaching experiences (Dunst & Espe-Sherwindt, 2016). Moreover, the study's findings highlight the convergence of educator coaching models, integrating principles such as applied learning (Desimone & Pak, 2017) and adult learning (Collins, 2004), as well as individualized learning and feedback (Knight et al., 2015) in coaching families.

Family-centered practices in early childhood aim to empower mothers with the competence and confidence to recognize their children's developmental needs and interests (Frugone-Jaramillo & Gràcia, 2023; Knoche et al., 2012). Leveraging existing knowledge—a key aspect of adult learning principles (Collins, 2004)—mothers could make new information introduced during eCoaching more accessible. Their experiences beforehand as educators gave them a foundational level of knowledge, which Showers et al. (1987) identify as crucial for coaching "buy-in." Mothers also exhibited choice in setting goals for themselves and their children, which research has indicated builds self-efficacy and motivation (Schunk & DiBenedetto, 2021). Over time, mothers became more vocal in sharing ideas and data, guiding progress toward their child's current and future goals. The integration of adult learning principles was evident as mothers demonstrated self-direction in the relevance of outcomes for themselves and their children (Collins, 2004). By the last debrief session, the mothers had outlined strategies to incorporate into their daily routines, focusing on sustaining the engagement in pretend play initiated through eCoaching.

Mothers highlighted the advantages of pretend play, aligning with literature on its benefits for literacy skills (Nicolopoulou et al., 2015), language and communication (Kızıldere et al., 2020), and vocabulary acquisition (Hutagalung et al., 2020). Given that both of their sons had SLD, the goals of pretend play were heavily focused on enhancing expressive language skills. Research consistently underscores the positive correlation between pretend play and language development (Lillard et al., 2013), with children engaging in more elaborate pretend play scenarios exhibiting higher levels of communication (Pizzo & Bruce, 2010). This was particularly evident in Eric, who, in addition to an SLD, was diagnosed with a DD and displayed less intricate pretend play behaviors compared to Oliver. Significant disparities were noted in the verbal interactions of the two children during play. Eric's language delays prompted his mother to prioritize goals centered on enhancing expressive language skills, such as sentence construction and pronunciation.

Using the integrated, responsive model of play intervention revealed an increase in mothers' ability to support 'good-fit' interactions during play. This model is effective in similar studies with preschool-age children educators worked with (Trawick-Smith et al., 2016). Researchers have noted links between advanced degrees in education, which both mothers held, and increased facilitation of 'good-fit' interactions (Trawick-Smith & Dziurgot, 2010). Pretend play opportunities led to quicker conflict resolution and provided chances for enhancement related to eCoaching goals (e.g., vocabulary, sequencing). Consistent with previous literature, mothers in eCoaching often used adult prompting as a strategy with their child, leading to increased pretend play sequences (Barton et al., 2019), AAA (Stahmer, 1995), social pretend play actions (Kalkusch et al., 2021), and vocabulary (Kim et al., 1989).

Moreover, during their interactions in pretend play, mothers effectively prompted increased verbal expressions and expanded vocabulary, consistent with prior research findings (Kızıldere et al., 2020). This rise in verbal engagement corresponds with the communication needed to create a mutual understanding of the non-literal actions in pretend play (Fein, 1981). Unlike solitary play, which relies primarily on individual imagination, facilitating pretend play requires communication to introduce different ideas into the play scenario (Bruner, 1972). This process of building shared understanding through communication is known as a "joint play narrative" (Hakkarainen et al., 2013). The presence of a "joint play narrative" was evident in the interactions between mother and child through discussions of roles (AAA) and object substitutions. Narratives, especially within the context of pretend play during caregiver interactions, offer valuable opportunities for higher-order thinking discussions, particularly for children aged 4 to 5 (Frausel et al., 2021). The American Academy of Pediatrics suggests that children with limited verbal abilities may express themselves through language within playful contexts (Ginsburg et al., 2007). Eric and Oliver exhibited increased verbal engagement when playing with their mothers, with Eric showing the most notable improvement. These advances in vocabulary acquisition through play are supported by previous literature (Hutagalung et al., 2020), with researchers advocating for pretend play as a conduit for language development (Lillard, 2013).

During the eCoaching sessions, Eric and Oliver enhanced their ability to incorporate OS, AAA, and

sequences into their pretend play (Saral & Ulke-Kurkcuoglu, 2020). The literature has noted differences in complex pretend play behaviors among children with DD, like Eric (Kasari et al., 2013; Lifter et al., 2011). The prompting strategies used by the mothers align with previous literature on pretend play interventions (Barton et al., 2019). A study by Meacham et al. (2014) observed a similar phenomenon, finding that open and closed questioning during pretend play increased language and language modeling in preschool-aged children. The rise in verbalizations and vocabulary may be linked to the increased questioning, modeling, and communication about non-literal behaviors when children engage in play with their mothers.

Implications for Practice, Policy, and Future Research

Using eCoaching through pretend play offers a promising family-centered practice to support children with developmental delays. Pretend play is intrinsically motivating to preschool-aged children, and the complexity of pretend play as a cognitive form of play expression allows for multiple entry points to learning. Within this eCoaching model, the importance of caregivers' ability to draw on background knowledge was central to their learning. Therefore, coaches should take the time to incorporate knowledge of an individual's background. Additionally, both mothers felt the coach centered eCoaching around their family and child and praised the relationship formed with their coach. These comments reveal the interpersonal nature of a coaching intervention (Gardiner & Weisling, 2020) and that the relationship can be achieved virtually. As policies that inform early childhood and special education practices evolve, policymakers should consider the virtual delivery of services through an eCoaching model in allocating resources. For example, future policy may consider guidelines on technology privacy, reimbursement for technology resources, and guidance on remote family-based support as an alternative and effective method of service delivery.

A limited sample size was used to describe each mother-child pair (Yin, 2017), and these participating dyads were not randomly selected. Findings in this study are promising, and replication with greater attention to caregivers of diverse backgrounds (e.g., education, gender) would be a natural progression of this research. Research on eCoaching should consider measuring caregivers' background knowledge, as prior experiences have been shown to influence eCoaching outcomes. Future studies should also explore the influence of caregivers on their child's self-directed play ideas and examine how a caregiver's presence might unintentionally change the child's play. These interactions could be viewed as trade-offs in how facilitation affects various developmental domains in children. Additionally, examining individual variables associated with the eCoaching cycle, such as observation, debriefing, and virtual elements, and their corresponding outcomes would provide valuable insights for the field. Lastly, following up with mothers and children post-eCoaching would provide greater insights into the short-term and long-term influences of eCoaching.

Overall, the mother's outcomes via eCoaching practices using pretend play are promising. Both children exhibited needs that benefited from participation in eCoaching through pretend play. Furthermore, mothers conveyed a high level of contentment with eCoaching, recognizing it as an excellent family-centered approach to support children with developmental delays. These mothers honed their abilities in observing and engaging responsively, focusing on enhancing their child's individual development within the home environment during pretend play.

Declarations

Authors' Declarations

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'So, this will do for you guys': A closer look at Maine's Part C rural service delivery

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Abstract: This study examines family-centered strategies used by Maine's Part C early intervention providers to support families residing in rural communities who may be experiencing vulnerabilities. Through focus groups, early intervention providers shared strategies and barriers when supporting families. Rurality-focused segments impacting early intervention services were identified in the following themes: (a) teaming and collaboration, (b) professional learning, (c) Part C implementation, and (d) resources and services. State funding and policies that focus on rurality may be an important contributing factor to strengthening structural inequities and increasing recruitment and retention of providers in rural areas.

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Introduction

The Part C Early Intervention (EI) program of the Individuals with Disabilities Education Act (2004) in the United States is an EI program used by states to support families and their infants and toddlers who may be at risk for or diagnosed with a developmental delay or disability (U.S. Department of Education, 2023). The IDEA Part C program was designed to enhance the capacity of families to meet the developmental needs of their child, minimize the need for special education and related services when children enter school, and enhance children's long-term outcomes (IDEA Infant & Toddler Coordinators Association, 2024). Under the Part C grant, states implement a public awareness program and Child Find activities. Child Find mandates that states actively identify, locate and evaluate infants and toddlers who may have disabilities or suspected to have disabilities as early as possible (Early Childhood Technical Assistance Center, n.d.). A child must meet the state's definition of an infant or toddler with a disability or developmental delay to be considered for services under Part C.

Research in EI documents both the importance and difficulty of serving families raising children with disabilities (Bruder et al., 2021). However, less is known about the principles and practices used by EI service providers working with families who may experience vulnerabilities such as poverty, rurality, unhoused, and parent/caregiver disability (Spence et al., 2023). This current study, part of a larger phenomenological project (see Spence et al., 2023) aims to examine the family-centered principles and practices used by EI providers in one state working with families living in rural communities.

Theoretical Frameworks

Aligned with Bronfenbrenner's Bioecological Systems Theory (2005), Part C EI services occur within the child's everyday natural environment and are intended to be strengths-based, family-centered (e.g., dignity and respect), and family capacity-building (e.g., achieve family-set goals). The Council for Exceptional Children and the Division for Early Childhood Initial Practice-based Standards for Early Interventionists and Early Childhood Special Educators (2020) emphasized the need for professionals to implement family centered practice (FCP) and "…support families to achieve the goals they have for their family and their young child's development and learning; and promote families' competence and

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confidence during…intervention." Specifically *Standard 2: Partnering with Families* focuses on provider application of strategies that build upon families' existing strengths, foster family competence and confidence, and develop trusting, respectful, affirming and culturally responsive partnerships with all families (2020). Additionally, the Division for Early Childhood (2014) Recommended Practices (RPs) provides guidance to professionals and families about FCPs that are specifically known to promote positive outcomes for young children who have or are at risk for developmental delays and disabilities and their families. FCPs have helped to fulfill children and families' goals (Kilmer et al., 2010; Xu et al., 2017) and increase families' satisfaction with services (Smith et al., 2015; Xu et al., 2020). Given the potential cost savings to the state, FCPs may also be beneficial to the community (Hajizadeh et al., 2017).

Likewise, the RPs (Division for Early Childhood, 2014) offer guidance to EI providers about specific behaviors they should use to support teaming and collaboration (TC) when working with young children with developmental delays and/or disabilities. The TC RPs (Division for Early Childhood, 2014) include professionals engaging in joint planning and implementing supporting/services with all team members (TC1), exchanging expertise, knowledge and information to build team capacity (TC2), using effective communication (TC3), discover and access community-based services (TC4) and identifying one primary provider to serve as the liaison between the family and other team members (TC5). Additionally, the *Mission and Key Principles for Providing Early Intervention Services in Natural Environments* accentuated the foundational values necessary to support the system of family-centered EI services (Workgroup on Principles and Practices in Natural Environments, 2008). Validated through research, model demonstration and outreach projects, these key principles guide EI professionals. For example, Key Principle 2 outlines that EI professionals provide families with resources and support that can enhance their child's learning and development. Additionally, Key Principle 6 calls attention to the families' priorities, needs and interests, which are addressed most appropriately by a primary provider who represents and receives team and community support. EI professionals may not be able to adequately implement EI services and family-centered strategies if professional standards and key principles and practices are not in place or system-supported. Despite the consensus of the importance of family-centered early intervention for *all* families (Bruder & Dunst, 2005), limited research exists about the FCPs used in Part C EI, specifically within rural communities.

Rural Context

No comprehensive or definitive definition of rural currently exists (Longhurst, 2022; Thier et al., 2021). Therefore, the generally accepted definition of rural is that of the U.S. Census Bureau (2023a). The U.S. Census Bureau defines rural as what is not urban—that is, after defining individual urban areas, rural is what is left (U.S. Census Bureau, 2023a). Young children in rural areas are more likely to be eligible for Part C services (Decker et al., 2020; Roberts et al., 2014), yet this population is underrepresented in rural education literature (Thier et al., 2021). Therefore, we emphasize the benefits of rural settings. For example, rural schools are often central to the identity of the rural communities, promoting stronger attachments for residents and stronger commitment to student achievement (Showalter et al., 2023). Community values may be a strong motivator for student success. In fact, students in rural settings experience a higher graduation rate than their peers in non-rural settings (Showalter, 2023). Likewise, rural schools often have smaller populations and class sizes which may increase the personalized attention students receive from teaching staff and administration (Showalter et al., 2023). It is important to capitalize on the culture of rural communities to enable families and young children to achieve the intended EI outcomes.

Yet families residing in rural communities have long reported barriers to accessing EI services including access to information, providers, and transportation (Cummings et al., 2017; Decker et al., 2022, 2020; Elpers et al., 2016, Singh et al., 2019). Likewise, EI agencies in rural areas report obstacles including recruitment and retention of Part C professionals, the ability to meet the basic needs of families experiencing vulnerability (e.g., homelessness, poverty, mental health), and access challenges that are characteristic of a rural state (e.g., transportation, geography) (Dwyer, 2019). Additionally, very few specialized providers (e.g., occupational therapists (OT), physical therapists (PT), speech language

pathologists (SLP), etc.) in rural areas have pediatric backgrounds (Haring & Lovett, 2001). These barriers, specifically access to services and highly trained professionals, may influence the strategies that Part C providers use when working with families in rural communities (Decker et al., 2022, 2020; Cummings et al., 2017).

This study occurred in Maine, one of the most rural states in the nation (U.S. Census Bureau, 2023b). The Rural-Urban Continuum Codes (RUCCs)(U.S. Department of Agriculture, 2024) distinguish between metropolitan and nonmetropolitan counties by population size. The RUCCs allow researchers to view county-level data when analyzing trends related to population density. Using the 2023 RUCCs, eleven of Maine's, sixteen counties are classified as rural. A disproportionate number of high need families reside in rural, remote, and sparsely populated areas (U.S. Census Bureau, 2023c). For example, 10.8% of [state] rural residents fall below the poverty line (U.S. Census Bureau, 2023b), and 11.2% of households identify as food insecure, meaning that they have trouble providing enough food due to a lack of money or resources (Rabbitt et al., 2023). Reportedly 61,018 children aged five and under reside in Maine and are the most likely age cohort to be poor, with 15% living below the poverty line (Kids Count Data Center, 2023; U.S. Census Bureau, 2023c). In the U.S., 57.8% of the population is White alone, not Hispanic or Latino. However, in Maine, over 93% of the population is White (U.S. Census Bureau, 2023c). In 2022, 1,476 infants and toddlers were receiving early intervention services, or 2.4% of the state's population (Frazier, 2024). The percentage of children served in Maine's early intervention system are represented by the following: 2.5% Asian, 3.4% Black/African American, 1.5% Hispanic/Latino, 2.4% White, and 2.3% two or more races. Data cannot be reported for American Indian/Alaskan Native and Native Hawaiian and Other Pacific Islanders due to suppression of data to avoid identification (U.S. Department of Education, 2023). Thus, the state is both over-representing and undeserving specific minoritized communities. These statistics highlight the percentage of Maine's children and families experiencing vulnerability.

In Maine, Child Development Services (CDS) is a quasi-governmental agency, supervised by the Department of Education, and responsible for the implementation of the IDEA Part C EI program (Frazier, 2024). One CDS state office and nine regional locations span this northeastern rural state. The CDS agency maintains system-wide policies and procedures, centralized fiscal services and data management system, and system-wide contracts for service providers (Frazier, 2024). Part C EI service providers contracted by this system adhere to the routines-based early intervention model (McWilliam, 2010) and provide family-centered services within natural environments (e.g., family/caregiver homes, childcare). EI providers use a transdisciplinary approach whereas the provider receives frequent support from other related service professionals, and in turn, serves as the family's coach to strengthen parenting competence and confidence and promote child learning. In this approach, each regional location has weekly team meetings to collaborate about child outcomes.

The purpose of this study was to examine the family-centered principles and practices used by EI providers in one state working with families living in rural communities. The study adds to the literature by documenting awareness of rural issues impacting providers and families. This is the first study to examine the family-centered strategies used by EI providers to support families residing in rural communities who may be experiencing vulnerabilities. The following questions guided the analysis: (1) What themes emerged from reported challenges and potential barriers to implementing EI services with families experiencing vulnerabilities and residing in rural communities? and (2) What solutions, if any, were offered by EI providers?

Method

The current study is a sub-study of a larger phenomenological study (see Spence et al., 2023). Maine was selected because both lead researchers represented EI personnel preparation programs at two institutes of higher education within the state and had specific interests in policy, personnel and professional development impacting EI services. While rurality was not a primary research question in the larger study, topics related to supporting families in rural communities were often discussed by focus group participants. The larger study was approved by the Institutional Review Boards at each of the lead

researcher's institutions and focused on family-centered strategies EI providers report using with families experiencing vulnerable circumstances. Representing the nine EI service regions across the state, nine focus groups were conducted that included EI providers and service coordinators. An additional focus group was held with regional managers, for a total of 10 focus groups. Data from the regional managers and seven of the nine EI service regions are reported in this current study. Using the RUCC (U.S. Department of Agriculture, 2024), the two EI service regions that did not contribute to the data in this study are in counties not designated as rural.

Procedures

The researchers gained permission from the state Part C Director to ask regional EI managers to pass information about the study to their staff. Managers assisted with identifying and reserving a room for the focus group, and shared information about the study time and location with their staff. Managers were not aware which EI providers participated in the study. The EI provider focus groups were held at a location within their region, generally a large conference room in the regional site, with options for remote participation. The focus group for regional managers was held at a regional office, centrally located in the state, with remote options for participation. Once all participants were present, they read and signed an informed consent form and completed a demographic survey. A semi-structured protocol was used to explore strategies used by participants to support families in EI and with another area of vulnerability. Vulnerabilities discussed during the focus groups included homelessness, poverty, parents with disabilities, and foster families, among others. Participants were encouraged to share their own experiences and expand on each other's responses. The focus groups were recorded, and research assistants transcribed the recordings following the completion of each focus group.

Participants

The 56 participants in this study represented 43% (49/114) of the state's Part C direct service providers and seven of the eight managers (88%), who supervise providers at the nine regional sites. The participants were primarily White, with graduate education (See Table 1). There was a range of experience working in EI, from less than a year to more than 30 years, with 33% of providers working in EI for less than 3 years. One direct service provider and two managers participated remotely. All seven program managers had been in that role for less than three years, although all had more experience working within the EI system.

Analysis

To address the guiding questions, the research team conducted a thematic qualitative analysis (Miles et al., 2014) with a multi-step, collaborative analysis process (Cornish et al., 2013). The transcriptions were utilized as primary sources of data. Seven themes were identified in the larger phenomenological project (family-centered strategies, Part C implementation, perceptions, professional experiences, professional learning, resources and services, and teaming and collaboration) and a codebook was developed using an iterative, collaborative consensus process across multiple stages (see Spence et al., 2023 for a complete description of the primary analysis procedure). While no specific focus group question specifically addressed rurality, providers often mentioned rurality in relation to information they shared about their experiences with families; therefore, when relevant to the current study, rurality was captured in this step. Once the primary analysis was completed, a research assistant reviewed all segments to identify the rurality-related segments. She created a spreadsheet with the segments in their originally coded categories, and the two lead researchers individually read each segment, determined the presence or absence of rurality in the segment, and discussed their findings. The lead researchers reached consensus for rurality-focused segments identified as having an impact on EI services (Cornish et al., 2013).

Reflexive Statement

As researchers, professional development providers, and early interventionists, we believe strongly in a high-quality Part C system. We recognize the critical importance for supporting families engaged in Part C services, as well as the need for supporting the professionals who work in the field. We also

acknowledge the real gaps in funding that impact Part C systems and how this may impact quality of services. We recognize the differences and inequities across regions and how resources may not be distributed evenly within the same state. We believe that hearing the experiences directly from those closely engaged in the system can help to shape and improve service delivery for all.

Table 1. Focus group participants

Participants' characteristics	n %
Gender (n=56)	
Male	1 (1.8%)
Female	55 (98.2%)
Current position in early intervention system (n=56)	
Service coordinator	10 (17.9%)
Early childhood special educator	10 (17.9%)
Occupational therapist	8 (14.3%)
Program manager	7 (12.5%)
Special educator, other than ECSE	8 (14.3%)
Speech language pathologist	4 (7.1%)
Physical therapist	2 (3.6%)
Educational technician	2 (3.6%)
Teacher of deaf/hard of hearing	2 (3.6%)
Licensed clinical social worker	1 (1.8%)
Other / no response	2 (3.6%)
Educational level attained (n=56)	
Associate degree	2 (3.6%)
Bachelor's degree	19 (33.9%)
Master's degree	33 (58.9%)
Doctoral degree	1 (1.8%)
No response	1 (1.8%)
Years worked in profession for which prepared (n=56)	
Less than 1 year	2 (3.6%)
1-3 years	4 (7.1%)
4-6 years	3 (5.4%)
7-12 years	12 (21.4%)
13-18 years	14 (25%)
19-24 years	9 (16.1%)
25-30 years	6 (10.7%)
30+ years	6 (10.7%)
Years worked in early intervention (providers; n=49)	
Less than 1 year	6 (12.2%)
1-3 years	10 (20.4%)
4-6 years	7 (14.3%)
7-12 years	8 (16.3%)
13-18 years	4 (8.2%%)
19-24 years	6 (12.2%)
25-30 years	4 (8.2%)
30+ years	3 (6.1%)
No response	1 (1.8%)
Years worked in early intervention (managers; n=7)	
Less than 1 year	0 (0%)
1-3 years	0 (0%)
4-6 years	1 (14.3%)
7-12 years	3 (42.9%)
13-18 years	2 (28.6%)
19-24 years	0 (0%)
25-30 years	0 (0%)
30+ years	1 (14.3%)
Years worked in current role in early intervention (managers; n=7)	
Less than 1 year	2 (28.6%)
1-3 years	5 (71.4%)

Findings

Based on the qualitative analysis (Miles et al., 2014), rurality-focused segments reported by EI's as impacting EI service delivery were identified in four of the seven themes identified in the original phenomenological study: (a) teaming and collaboration, (b) professional learning, (c) Part C implementation, and (d) resources and services. Regional focus groups are represented in the findings using names of trees to protect the anonymity of EI regional sites. Participant quotes are provided throughout the results and brackets are used to provide clarifying information and/or to omit information to protect participants' confidentiality.

Teaming and Collaboration

Maine uses the primary service provider (PSP) model, including Individualized Family Service Plan (IFSP)--based teaming once per week (McWilliam, 2010). All team members attend regular team meetings for the purpose of colleague-to-colleague coaching around IFSP outcomes. Participants *reported* using technology, including web-based conferencing and text messages, to facilitate *teaming and collaboration.*

Facilitator summarizing previous comments: "So the travel is an issue getting everyone together?"

Maple A: Oh yea, I see [PSP name] maybe only once a week for 5 or 10 minutes and I bring up my caseload and I am like 'okay tell me about that kid quick. What about that kid, anything with that kid?' And she has always got something to tell me. I mean parents separating and then back together and then this family's house burnt down, I mean it is just crazy. But no, I mean technology, we just text each other all the time.

While technology supported teaming and decreased some barriers, others indicated that they preferred in-person meetings. A participant from Linden stated, "It is a challenge for you because you are by yourself…Sometimes it is hard when we only see each other once a week so it is hard to have that interaction." Another participant commented "We do see at least one Zoomer, but yeah, it is easier certainly when we are face to face." The isolation participants felt was shared across multiple groups.

Professional Learning

Maine requires EI providers to participate in ongoing professional development (PD) related to their work for recertification. EI providers and managers reported that in-person PD was difficult to access for those working and living in rural areas of the state, reporting that they were often responsible for covering the cost to attend the professional development opportunity.

Birch A: We have lots of opportunities. But not very many are local.

Birch B: Oftentimes we can go but we eat the milage and eat the cost.

Additionally, a participant in Willow shared that the PD available to them does not center the issues families and providers in rural areas experience, stating: "…they're geared for cities."

The role of who provides PD opportunities and who pays for these opportunities was a topic discussed across several groups. During the discussion between managers, one manager mentioned that another region offered PD. The second manager replied that they had to "seek it out" and "It's not like someone is doing this for us" (Redwood), emphasizing the lack of equitable opportunities across the rural state.

Part C Implementation

EI providers work within the policies and procedures set within the state Part C office and regional offices. Service delivery is affected by these policies, and EI providers discussed the impact due to rurality. Policies related to staffing, efficiency, and supervision were discussed across the focus groups as impacting EI providers' daily work.

Rurality impacted participant's perceived ability to support families. The PSP model in use for the state (McWilliam, 2010) indicates that the PSP should be decided based on who is most appropriate to support the identified IFSP outcomes. However, geography and provider availability often played a larger role in that determination. When asked how the PSP was determined for families facing vulnerable

circumstances, many responded with logistical concerns like, "Geography. Unfortunately, that's right now how it is." (Birch). Participants in Ash, Linden, and Maple discussed lack of discipline-specific providers (e.g., OT, PT, SW). One area of the state described the impact of a shortage of providers, sharing that discipline-specific providers may only do evaluations or consults due to availability.

> I'm the only SLP so I go from.. I go wherever anybody needs me in [area]... I'm the only one and all I can do really is evaluations and joint visits or consults because I'm going everywhere… and you know we don't have an OT on our team. (Maple)

Besides having only one SLP and no OT, this area also does not have a PT. Therefore, all PSPs are developmental service providers, even if the family and IFSP outcome would be best supported by a domain-specific provider,

> Well, we already mentioned it, but we don't have enough providers. We don't have enough contracts, so we don't have OT/PT (Maple).

A participant in another region also mentioned the conflict between supporting the IFSP and logistics,

> Our only other occupational therapist…only does consults. So, I feel so geographically stretched and honestly for the [this area], I typically, even if OT is the best fit, I cannot work it into my schedule. But even now, I see kids from [three geographically distant cities] if that is where a child is. So, it is such a long stretch and sometimes I will see 3 kids in one day and I will drive like 6 hours. So how is that an effective use of our time? And scheduling is hard. I know some of that is the nature of the job but… (Linden)

A manager discussed that when families move, even within the same region, it can cause logistical difficulty to have continual EI services due to distance and staffing.

> We have a kid that lives in central [region]. It is two hours from our office north and it is two hours from our office south so with our site we have, we basically have one of each provider so it's not like a special educator is seeing this child down in southern [region] and then moves all the way up the northern half of our [region]. We don't have a special educator up there…so it's not like we can even change providers that easy up here. (Redwood)

In addition to sharing their experiences with provider shortages, some of the participants also discussed daily logistics,

> I mean I do work on the side of the road sometimes because I must be somewhere in that region next, and I can't go back to this other family. Efficiency can get tricky that way. (Linden).

Through the discussion, there were mentions of potential solutions and alternative ways of approaching caseloads and travel responsibilities,

> But sometimes it seems like if we had a little bit more strategic planning, it seems like things that appear to be costing more money actually save some. Hiring a person might really cost less because I am tracking and logging like a million miles a week. (Linden)

EI providers need to know the local communities and services they provide, and an important aspect of Part C service delivery is to be a resource to their families to support these connections. By spreading EI providers across a large region, it can be more difficult to learn about services in each community they visit,

> And I think it is a disservice, it's stressful, not economically wise to send people all over [county] and not keep them regionalized. It cuts down on the numbers of children you can see, but it also prevents you from gaining that experience that would help the vulnerable family with some kind of resource. (Pine)

State and regional policies are written to cover all families in the state. EI providers hold a strong commitment and will do what they need to support the families eligible for Part C services, however the implementation of policies often leaves the burden to the individual EI,

> I picked up a child that I have no way how I am going to get to them. I am going to have to reconfigure all my families to try to figure out how to do it, and I will. (Linden)

Resources and Services

Participants emphasized the lack of resources (e.g., transportation, related services) and the negative impact for families attempting to access EI services in rural communities. This lack of resources also extends

into additional services that a family may need, such as medical care or therapies outside of the EI system. As one EI shared,

> There are those families up and down east [state] that have to drive, whether or not they have a vehicle, two hours plus to get a diagnosis and then there are no services available for after diagnosis (Pine).

An EI in another area of the state discussed not only the considerable distance but the funding required to access the services,

> And even specialty clinics, everything's in [town]. Well, when you don't have money and you can access [medical appointment funding source], you still must have money to go. (Birch)

Transportation for families to access medical services is available throughout the state; however, EI providers reported that these services are unreliable. EI providers shared that parents often had to choose between priorities because transportation schedules did not align,

> Palm A: I have a family in [town], which is in the middle of nowhere, and [bus service] cancels on them more times than they don't. And then mom is choosing, okay do I get the older brother to preschool or do I get younger brother at home to meet with [EI].

> Palm B: I have kiddos that have those speech services, and they miss those visits, and we have a waiting list of 200 kids, you are done. The parents are like, 'I do not know what to do' and we have had several kids have [therapy clinic] drop them because all of them were [bus service] related.

The lack of public transportation in rural communities was also noted as a barrier for families,

> There is no public transportation available whatsoever and these families do not have money for a taxi (Maple).

The discussion then expanded to potential solutions so that families could access resources, however barriers were noted as well,

> Maple A: In the more rural areas where I am there's churches, that provide, not only food, but general assistance, or other things like household needs. But you have to know who to call at what church and they have to kind of like the person you are calling about and then they will decide how much they are going to give them.

> Maple C: "I live in the (county name) area and there is not a lot down there for food pantries we have one in (town name) but you have to live in (town name) in order to access it. There is one on each reservation but those are the only three that I know of in the (county name) area."

A manager summarized feelings about how her rural region might be perceived,

> We might have the service up here but is it like the appropriate service? It is like piecemealed together because 'oh it is [region] so this will do for you guys. (Redwood)

Discussion

The purpose of this study was to (1) identify the themes that emerged from reported challenges and potential barriers to implementing EI services with families experiencing vulnerabilities and residing in rural communities, and (2) determine what solutions, if any, were offered by EI providers. Providers supporting rural families perceived hardships related to the following themes: (1) implementation of services, (2) access to resources and services, (3) teaming and collaboration, and (4) professional development. Teaming and collaboration are an essential, and required, component of high-quality EI service delivery (Division for Early Childhood, 2014). EI providers in rural areas of the state indicated that teaming with colleagues was difficult when they were not able to see each other regularly. Many regional sites relied on Zoom technology for collaboration opportunities and attendance at team meetings, at a time when other regional areas were primarily meeting in person or had the opportunity to talk while being in a shared office. While technology can provide opportunities for collaboration, effective processes must be considered to increase EI teaming and collaboration and facilitate implementation in rural settings specifically (Decker et al., 2020).

Access to ongoing professional learning opportunities is critical for maintaining current knowledge of best practices. EI providers in rural areas reported that they had to travel, often at their own expense, to attend professional learning activities. Like collaboration, technology was also a factor when EI providers

were discussing access to professional learning opportunities. This could be one strategy utilized to increase access to professional learning while minimizing the hardship for providers in rural locations. Because of their training to work with diverse populations, EI providers can be leaders for changing policy for inclusive practices (Collins et al., 2017); however, ongoing professional development is a necessity to support new ideas, knowledge and practices (Dunst, 2015).

Workforce shortage impacts service delivery (IDEA Infant & Toddler Coordinators Association, 2024). This is particularly true in rural areas and several EI providers discussed not having discipline-specific providers (e.g., occupational therapists) as part of the EI teams. This can negatively impact service delivery as the families' main concerns may not be able to be fully addressed, and best practices are not able to be utilized. For example, DEC RPs state "Practitioners representing multiple disciplines and families work together as a team to plan and implement supports and services to meet the unique needs of each child and family." (Division for Early Childhood, 2014). This is not able to be carried out as intended if there are not multiple disciplines, knowledgeable about Part C, available to serve specific rural areas.

Although EI providers primary focus is on developmental supports and services, taking a holistic approach to support includes discussion of resources available within the community, such as food cupboards and church supports, particularly if these topics have been captured in the family-focused outcomes on the IFSP (Division for Early Childhood, 2014). This includes knowing how access, or lack thereof, to one resource may impact access to another resource (e.g., transportation to a food pantry). Knowing the resources available in rural communities that can be used to meet families' critical needs will support the family, and as those needs are met, services can shift to supporting the child's developmental skills (Decker et al., 2020).

During the focus group discussions, providers did not suggest solutions to the barriers they mentioned, and we propose potential solutions within the implications outlined below.

Implications for Systems Change

The Division for Early Childhood's (2022) Position Statement on Ethical Practice advances equity and inclusion and advocates for "…the field to remove structural inequities so all professionals, families, and children can contribute, benefit, be valued, and have a sense of belonging." State funding and policies that focus on rurality may be an important contributing factor to strengthening "structural inequities" and increasing recruitment and retention of providers in rural areas. For example, a PD system designed and delivered to promote equity and access by all providers, with limited travel requirements, would acknowledge providers' concerns. Implementing policies that acknowledge regional differences (e.g., access to resources, productivity measures that consider long drive time between appointments) with funding structures to support these differences will improve service delivery and provide equitable options for providers and families. For example, recruitment efforts such as "grow your own" programs that are tailored to individuals who reside in rural communities would provide opportunities for providers to live where they serve. Additionally, salary differences are a known barrier for retention in EI settings (McLean et al., 2021). Policies and funding structures that account for time and travel could be used as a retention strategy and would support a more equitable pay structure.

Implications for Professional Learning Systems

As emphasized in the professional standards, principles, and practices, EI providers are expected to develop and sustain family partnerships while delivering a variety of intervention practices to a diverse population of children and families, including families experiencing vulnerabilities (Bruder et al., 2021; Council for Exceptional Children, 2020; Workgroup on Principles and Practices in Natural Environments, 2008). However, EI providers report difficulties in sustaining meaningful partnerships when the demographic and sociocultural characteristics of the families they serve are different from their own (Fleming et al., 2011). Providers report valuing parental involvement, but they may not fully understand or receive training on how to facilitate family-centered and family capacity-building interactions (Fleming, et al., 2011). Based on the findings of this study and others (Campbell et al., 2009; Fleming et al., 2011), EI

providers may need support and specialized training to feel comfortable engaging with families experiencing vulnerabilities. System-wide professional learning opportunities focused on diverse families and offered through various modalities to support the needs of providers living and working in a rural state (e.g., in-person, remote, asynchronous) are needed to increase providers' competence and confidence to implement family-centered intervention. Likewise, partnerships between Institutes of Higher Education preparing personnel and state's in-service professional learning system, working together to design and implement targeted training, would strengthen the preservice to in-service pipeline.

Limitations

The qualitative nature of this study allowed for an in-depth understanding of providers' challenges when implementing services in rural communities but is not generalizable to a larger population. Furthermore, the participants of this study were primarily female and White, mirroring the state's EI workforce, and were recruited through a state's Part C system, limiting the broadness with which the results can be attributed. Also, we were not able to determine solutions, if any, offered by EI providers. The second question did not result in specific solutions offered by providers, most likely because the focus of the larger phenomenological study was family-centered practices used by providers and not rurality. As researchers, we did not specifically ask providers about potential solutions to the barriers faced when implementing intervention in rural settings; therefore, there were missed opportunities to learn more about how providers may overcome the issues they face offering services to families who live in rural settings.

Implications for Future Research

The themes that emerged from this study could inform future research of a larger and more diverse sample. Future qualitative research should investigate how to "address the social, political, and individual implications" of our findings and conclusions (Division for Early Childhood, 2022). Further investigation into the specific needs of EI providers and families receiving EI support in rural areas can help inform differentiated policies to meet unique needs related to rurality. Future research may also explore the impact of workforce shortages on rural EI service provision.

Conclusion

Research focused on rural settings contributes to a broader understanding of how best to provide early intervention services, especially to young children and families who may be experiencing vulnerabilities. We call for changes in policy that provide funding and resources to focus on community-engaged solutions. These solutions must support those in traditionally underserved communities, especially children and families living in rural areas. As the findings of the current study suggest, the EI field must address the realities of serving rural families, ensuring that professional learning opportunities are available, and systems must consider issues relevant to rural families.

Declarations

Authors' Declarations

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Research Article

Unintentional injuries at home and in the preschool setting: Greek ECEC professionals' and preschoolers' parents' knowledge and attitudes towards first aid

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Abstract: Although safety of home and preschool setting is a key quality indicator of the two main environments in which preschoolers spend most of their day, most unintentional injuries during early childhood take place in these two settings. Thus, despite the frequency of accidents during early childhood, scarce research has explored both the epidemiology of childhood injuries and the knowledge and attitudes of ECEC professionals' and preschoolers' parents towards first aid. Acknowledging this gap in literature, the present study aimed at exploring 74 Greek ECEC professionals' and 213 preschoolers' parents' knowledge and attitudes towards first aid. In addition, the study aimed at mapping the most frequently occurring accidents both at home and at preschool, as well as the places withing these two settings where most of the accidents happen. Results of the present study indicate that although participants have positive attitudes towards first aid, and most of them have been trained in first aid, their knowledge of handling accidents and other health related issues is limited. In addition, the results showed accidents rarely happen at home and at preschool. The accidents that have been reported to occur take place during children's free play. The most common places where accidents occur are in the living room and the kitchen. The results highlight the need for frequent training both for parents and ECEC professionals, for intersectoral collaboration between health and education organizations to design interventions and for awareness raising campaigns.

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Introduction

Maintaining and ensuring a healthy and safe environment is one of the key quality components of an early childhood education and care (hereafter referred to as ECEC) program. However, limited attention has been given to this aspect of quality both in Greece and internationally, even though unintentional injury rates highly among preschoolers (World Health Organization [WHO], 2008). Previous research from Greece reveals that ECEC professionals have not been adequately prepared to provide first aid during their initial professional preparation (Rentzou, 2020; Rentzou & Daglas, 2018). In addition, studies examining the quality of ECEC in Greece highlighted that in terms of health and safety practices the quality of preschool classrooms is rather minimal, whereas in infant/toddler classrooms the quality in terms of health practices is minimal, but rather good in terms of safety practices (Rentzou, 2011). Building on Aronson's (1992; cited in Gratz, 1994) argument that ECEC program quality can be maintained and improved by mapping health and safety conditions and emergent trends in ECEC programs, the present study aspires to fill the research gap related to the knowledge of and attitudes of ECEC professionals and preschoolers' parents towards first aid.

Unintentional Injuries During Early Childhood

Childhood unintentional injuries are among the greatest public health concerns, as along with child violence, they are the major killer for thousands of children every year (Góes et al., 2023; WHO, 2008). Thus, the injury burden is related not only to mortality but also to children's morbidity, as according to Vincenten

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et al. (2005, p. 183-184) "it is estimated that every day in the EU, not only do 14 children die due to injuries, but also 2240 are admitted to a hospital and another 28 000 receive treatment in an emergency and accident department. In 2001, a total of 4793 557 Disability Adjusted Life Years (DALYs) was attributed to child injury deaths for children aged 0 to 19 years in Europe, accounting for 200 DALYs per 10 000 children overall and 156.28 DALYs per 10 000 children for the youngest, aged 0 – 4 years". The mortality and morbidity burden is higher among preschoolers, as children younger than 5 years are more likely to have unintentional injuries (Kahriman & Karadeniz, 2018; Kotch et al., 1993).

The increased rate of unintentional injuries among preschoolers has been attributed to various factors related to their developmental, physical, and behavioral characteristics (Calandrim et al., 2017; Góes et al., 2023; WHO, 2008). Physical characteristics that make preschoolers more prone and vulnerable to accidents and injuries include but are not limited to narrower airways, lower body mass, thinner and more fragile skin and the skull-body disproportion (Alhajjaj et al., 2021; Calandrim et al., 2017; Góes et al., 2023; WHO, 2008). Turning to developmental and behavioral factors these include but are not limited to preschoolers' lower motor skills, their curiosity and tendency to experiment and imitate behaviors, their innate desire to explore the world and to exert autonomy, their active lifestyle as well as their lack of fear and inexperience and inability to prevent dangerous situations (Alhajjaj et al., 2021; Bassam, 2022; Calandrim et al., 2017; Góes et al., 2023; Lee & Oh, 2018; WHO, 2008).

Given that preschoolers' time is shared between home and ECEC programs, these are the places where most of unintentional injuries occur during early childhood. Depending on the social and educational policy of each country, and whether children participate in ECEC programs or not, results about where most of the injuries occur, are inconsistent. For example, Kotch et al. (1993) found that of the 327 accidents, 146 occurred in homes, 149 occurred in or on the way to or from the childcare center, and 32 occurred in other locations. Li et al. (2012) also suggest that schools and playgrounds are the most common location for falls. On the other hand, other studies highlight that most early childhood injuries occur at home (Bánfai et al., 2015; da Costa et al., 2017; Nageh et al., 2020; Thein et al., 2005). Irrespective of the policies and of whether preschool aged children spent more time at home or at an ECEC program, it is apparent that parents and ECEC professionals are more likely to witness unintentional injuries. In addition, Kotch et al. (1993) report that the nature of injury does not differ substantially between injuries that have occurred at home and those that have occurred in ECEC programs. This substantiates the need for equipping parents and ECEC professionals with the skills and knowledge needed to treat injuries, that is first aid provision.

Yet, although the important role of parents and ECEC professionals as first aid providers is widely acknowledged research to date indicates that they both lack even basic first aid training skills. Specifically, as far as parents are concerned literature review highlights that although their quick and correct response during an injury can increase the chances of survival of the injured child and can limit disability (Alhajjaj et al., 2021; Anwar et al., 2021; Bánfai et al., 2015). Previous studies have shown that parents' first aid and accident prevention knowledge is inadequate. Turning to ECEC professionals, although most of them have witnessed injuries at the program (da Costa et al., 2017; Góes et al., 2023) and despite that fact that most injuries in ECEC require only first aid treatment (Li et al., 2012), ECEC professionals have been found to be insufficiently prepared to provide first aid (Ilha et al., 2021; Rentzou, 2020; Rentzou & Daglas, 2018) and they lack even basic first aid training skills (Góes et al., 2023; Lee & Oh, 2018).

The Present Study

Given the high percentage of unintentional injuries during early childhood, "in order to decrease the burden of injuries, it would be helpful to consider the changing risk of injury according to where young children are being cared for" (Kotch et al., 1993, p. 184). However, despite the fact that home and ECEC programs are the main settings where preschoolers spent their day, in Greece, the scarce studies which have explored educators' knowledge on first aid (e.g. Patsaki et al., 2012), have focused on educators working in higher education levels. On the other hand, Dimopoulos (2015) postulates that the limited studies conducted in Greece have aimed at assessing the level of knowledge among health professionals

and not among educators. In addition, in Greece we lack not only studies about the knowledge parents and ECEC professionals have on first aid provision, but also data on unintentional injuries during early childhood. The latest data available, to the best of our knowledge, indicate that between 1992 and 2004, we had 1593 deaths of children aged birth to 14 years of age. 874 of them were due to car accidents, 135 to drownings, 82 to fall, 47 to burns, 23 to poisoning and 423 to other not-known causes. Thus, it seems that 81% of children's accidents happen at home, while children were with an adult (Naftemporiki, 2021).

As it becomes apparent, although in other countries the epidemiology of childhood injuries has been well studied (e.g. Alhajjaj et al., 2021; Bánfai et al., 2015; Ilha et al., 2021; Kamel et al., 2014; Nageh et al., 2020; Yürümez et al., 2007), in Greece no research has been conducted with the aim to explore ECEC professionals' and preschoolers' parents' knowledge of and attitudes towards first aid. However, enriching the literature related to the epidemiology of childhood injuries and mapping ECEC professionals' and parents' knowledge and attitudes towards first aid and injury prevention is important for many reasons. First of all, as we have seen, childhood injuries occur in the main settings in which children spend most of their time. Therefore, it is important for parents and educators to have been trained in first aid as first aid knowledge can increase the chances of survival of the injured person. In addition, when parents and educators have first aid knowledge and training and understand the importance of first aid training, they can have an active role in health promotion and accident prevention among children. Thus, when ECEC professionals acknowledge the importance of first aid training, they can play a significant role in sensitizing parents in accident prevention and first aid training.

Understanding the epidemiology of unintentional injuries during early childhood as well as ECEC professionals' and parents' first aid knowledge is also important as according to Góes et al. (2023) WHO, the United Nations Children's Fund (UNICEF), and other organizations have pledged to make childhood injuries a global public health and development priority. Thus, it is recommended that policies, strategies, and action plans related to this issue are solid and include the implementation and dissemination of education and training programs on childhood injuries with health professionals. Furthermore, more research on this issue is important as it can reveal the need for training, technical assistance, or further resources both for parents and ECEC professionals, as well as the action that needs to be taken from education and health organizations. Finally, such research can give an insight into the factors that need to be considered to create safer environments for children.

Drawing on the above, the present study aspires to address this mismatch between the importance of the theme of unintentional injury prevention and treatment during early childhood and the scarcity of data. Specifically, the study aims at exploring ECEC professionals' and preschoolers' parents' knowledge and attitudes towards first aid, whereas at the same time it aims at mapping the most frequently occurring accidents both at home and at preschool, as well as the places withing these two settings where most of the accidents happen.

Method

Sample and Demographics

Data for the present study was collected in Spring 2023. Due to the exploratory nature of the study, the authors employed snowball and convenience sampling techniques. The total number of participants were 74 ECEC professionals, all of whom were females (100%) and 213 parents of preschool aged children, of whom 87.3% were the mothers of the children and 12.7% the father of the children. Table 1 presents the demographic information of the sample.

Table 1. Demographic information of the participants

Demographics	ECEC professionals		Parents	
Age group	20-29	2.7%	Less than 20	0.5%
	30-39	20.5%	21-30	10.3%
	40-49	46.6 %	31-40	64.3%
	Older than 50	30.1%	41-50	24.9%

Level of education	Post-secondary education	48.6%	High school	1.4%
	Technological educational institute -ECEC	36.5%	Senior high school	26.3%
	University ECEC	4.1%	Post-secondary education	8.9%
	University kindergarten teacher	5.4%	University	45.5%
	Master	4.1%	Master	15.0%
	Other	1.4%	Other	2.8%
Partners' level of education			High school	1.4%
			Senior high school	39.8%
			Post-secondary education	5.2%
			University	38.9%
			Master	10%
			Other	4.7%
Position in the ECEC center	Director	21.6%		
	Main educator	32.4%		
	Helper	44.6%		
	Student-practicum	1.4%		
Years of experience	M = 18.66 (8.53)			
Type of program	Infant program	33.8%		
	Infant/child program	23%		
	Preschool program	43.2%		
Children's age	2-12 months	5.4%	Child 1	M = 5.02 (2.73)
	13-24 months	20.3%	Child 2	M = 3.28 (1.96)
	25-36 months	9.5%	Child 3	M = 2.75 (1.08)
	3-4 years	40.5%		
	Other	24.3%		
Number of children			1 child	34.3%
			2 children	53.5%
			3 children	11.3%
			Other	1%
Children's gender			Child 1	57.7% boy
			Child 2	48.6% boy
			Child 3	58.3% boy

*Note: Standard deviation in parenthesis

Data Collection

Data for the present study was collected via questionnaires, which have been developed by the first author of the study, after the literature review. The questionnaires were administered in a paper format. The first author created a questionnaire for parents and one for ECEC professionals. The questionnaire which was addressed to parents consisted of five parts. Part one included 12 questions which aimed at recording participants' demographic information. Part two included 11 questions which aimed at mapping participants' previous education, training and experience in first aid provision (e.g. if they have been trained in first aid, type and timing of training, reasons why they have or have not been trained in first aid, if they have provided first aid in the past, etc.). Part three, which was adopted by Abelairas-Gómez et al. (2020), included four questions which aimed at collecting participants' attitudes towards first aid (e.g. to whom they believe first aid training is addressed, if they want to be trained further in first aid, etc.). Cronbach alpha for part three has been found to be 0.79. Part four included three questions. The first one aimed at exploring how often a list of accidents occur at home. A five-point scale, ranging from 1 = never to 5 = daily, was used to record the frequency with which accidents occur. Cronbach alpha for this part has been found to be 0.75. The other two questions, which were open-ended, aimed at mapping the main places in and outside the house, where most accidents happen. Finally, the last part included one question which aimed at exploring how well participants can handle a series of accidents/emergent cases. Specifically, a list of 51 accidents and emergent cases reported in first aid books was given to participants. Using a five-point scale ranging from 1 = no knowledge at all to 5 = very good knowledge, participants were asked to

rate how well do they think they can handle each of the 51 cases in case they occur. Cronbach alpha for the fifth part of the questionnaire has been found to be 0.98.

The questionnaire which was addressed to ECEC professionals had the same structure. Part one included 14 questions which aimed at recording participants' demographic information. Part two included 13 questions which aimed at mapping participants previous education, training and experience in first aid provision. Part three, which was adopted by Abelairas-Gómez et al. (2020), included five questions which aimed at exploring participants' attitudes towards first aid. Cronbach alpha for part three has been found to be 1.06. Part four included two questions. The first one aimed at exploring how often a list of accidents occur at the preschool setting. A five-point scale, ranging from 1 = never to 5 = daily, was used to record the frequency with which accidents occur. Cronbach alpha for this part has been found to be 0.85. The second question, which was open-ended, aimed at mapping the main places within and outside the ECEC setting, where most accidents happen. Finally, part five included one question which aimed at exploring how well participants can handle a series of accidents/emergent cases. Specifically, a list of 51 accidents and emergent cases reported in first aid books was given to participants. Using a five-point scale ranging from 1 = no knowledge at all to 5 = very good knowledge, participants were asked to rate how well do they think they can handle each of the 51 cases in case they occur. Cronbach alpha for the fifth part of the questionnaire has been found to be 0.97.

Data Analysis

The data from questionnaires were imported into two separate Microsoft Excel databases, one for parents and one for educators. Then data were transferred to SPSS software (IBM corp., v. 23.0.0.0). Quantitative data were analyzed using descriptive statistics. Depending on the part of the questionnaire, results are reported either using frequencies or means and Standard deviations. In terms of the qualitative data, thematic and inductive analysis approaches were employed to analyze qualitative data. Thematic analysis is according to Davis & Dunn (2019, p. 247) a "foundational analytical method designed to identify, represent and report thematic patterns that occur within the data". In this study, frequencies of each code are reported.

Ethical Considerations

The study was approved by the Ethics Committee of the University with which the first author is affiliated. Upon receiving the approval of the Ethics Committee, the first author submitted a request to the Municipality body responsible for childcare centers, in order to get a consent to administer the questionnaires to the ECEC professionals and the parents. Upon receiving the approval from the Municipality Committee, the second author of the study communicated with the principles of the preschool programs to inform them about the study. A general information letter and a consent form was provided to and signed by all participants. Both were providing information about the aim of the study, the voluntary and anonymous nature of the research, as well as their right to choose not to answer any questions, and to withdraw without penalty.

Results

Training, Experience in and Attitudes Towards First Aid

As far as ECEC professionals are concerned, the majority of them (90.4%) have been trained in first aid during their studies. 56.1% of them mentioned that the training they received was both theoretical and practical. Thus, 86.3% of them mentioned that they have been trained in first aid provision during their work. 69.8% of those who have been trained during their work mentioned that this training was both practical and theoretical and 96.9% mentioned that this training was offered by the organization for which they work, for free. As far as parents are concerned, 54.3% of them mentioned that they have been trained in first aid provision. 64.7% of the parents who have been trained in first aid provision, mentioned that the training was both theoretical and practical and 74.5% mentioned that the training was provided by their organization for free.

When asked when was the last time they have been trained in first aid, the majority of ECEC professionals (56.5%) mentioned that they have been trained 2-5 years ago. 18.8% have been trained 1-2 years ago, 10.1% 5-10 years ago, 7.2% have been trained less than a year ago, and another 7.2% have been trained more than 10 years ago. Parents' responses about the time of training, on the other hand, varied considerably. 23.3% mentioned that they have been trained between 5-10 years ago, 22.4% that they have been trained less than a year ago, another 22.4% that they have been trained 2-5 years ago, 19% that they have been trained more than 10 years ago and 12.9% that they have been trained 1-2 years ago.

Of the 30 ECEC professionals who have not been trained in first aid provision, all of them mentioned that they would like to be trained, whereas in terms of parents 98.3% of them mentioned that they would like to be trained. As far as the frequency of training is concerned, 70.5% of ECEC professionals mentioned that they would like to be trained once per year, whereas 57% of the parents mentioned that they would like to be trained once per year, 24.4% every six months and 18.6% once every two years.

Participants were also asked to select the reasons why they have chosen to receive training in first aid. Figure 1 presents the number of ECEC professionals and parents who have selected each of the listed reasons for training.

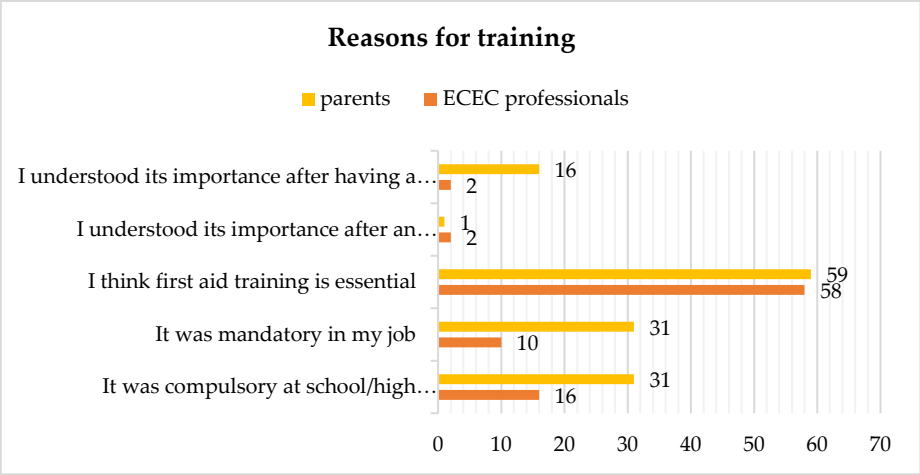

Figure 1. Reasons why ECEC professionals and parents have selected to be trained in first aid provision

In addition, participants were asked about the reasons why they have not chosen to be trained in first aid provision. Figure 2 presents the numbers of ECEC professionals and parents who selected each of the given reasons.

Figure 2. Reasons why ECEC professionals and parents have selected to not be trained in first aid provision

In terms of participants' experience in first aid provision, 58.9% of ECEC professionals mentioned that they have provided first aid during their work. In terms of first aid provision in their family/personal life, 55.6% mentioned that they have never provided first aid in this context. On the other hand, 69.8% of participant parents mentioned that they have not provided first aid in their work and 57.5% that they have not provide first aid in their personal/family life.

Moreover, participants were asked to select the sources of information they use for issues related to first aid provision. Figure 3 presents the number of ECEC professionals and parents who selected each of the given sources of information.

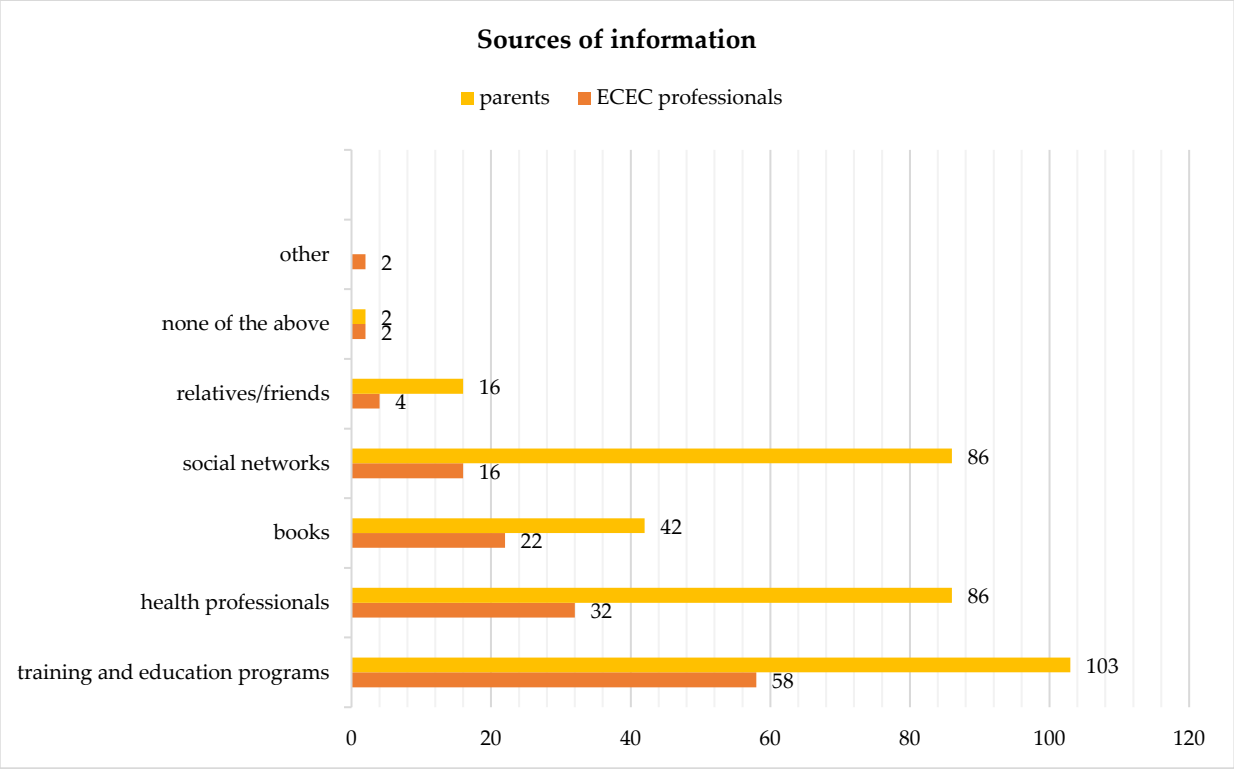

Figure 3. Main sources of information for first aid provision related issues

Turning to participants attitudes towards first aid, 68.5% of ECEC professionals and 77% of parents, completely agree with the statement that training in first aid should be obligatory at school. In addition, 71.2% of ECEC professionals completely agree with the statement that training in first aid should be an obligatory course during university studies for educators/early childhood educators. Table 2 presents ECEC professionals' and parents' attitudes towards first aid, by reporting the responses (yes or no) that received the higher percentage.

Table 2. ECEC professional's and parents' attitudes towards first aid

Attitudes towards first aid	ECEC professionals	Parents
I believe that first aid is relevant only for health personnel or people who have a duty to help	No = 94.6%	No = 92.9%
I believe that those who have children/those who work with children should know first aid	Yes = 58.1%	Yes = 55.9%
I believe that first aid is essential you never know when you will need them	Yes = 71.6%	Yes = 61.5%
I believe that first aid partially substitutes health care	No = 89.2%	No = 88.2%
I believe that everyone should know first aid	Yes = 67.6%	Yes = 87.8%

Frequency of Accidents, Places Where They Occur And Knowledge of Participants in Handling Health Related Issues

Participants were asked to report how frequently a series of accidents occur. Neither at home nor at the preschool settings there are accidents that occur either daily or weekly. At the preschool setting, fever was the only incident which was reported to taking place once or twice per month (M = 3.16; SD = .74). On the other hand, there were no incidents reported by parents as taking place on a monthly basis. Table 3 presents the incidents which received the higher ratings by parents and by ECEC professionals.

Table 3. Incidents that happen more frequently at home and at the preschool

Incident	ECEC program	Home
Fever	3.16 (.74)	2.14 (.61)
Vomiting	2.82 (.75)	1.69 (.59)
Falls	2.62 (1.22)	1.89 (.90)
Stomachache	2.44 (.78)	1.71 (.63)
Bites	2.42 (.95)	1.66 (.73)
Injuries	2.42 (.92)	2.05 (.82)
Bruises	2.23 (.77)	2.10 (.84)
Rash	2.15 (.73)	1.60 (.58)
Headache	1.96 (.79)	2.11 (.94)

* Standard deviations are reported in the parenthesis

In addition, participants were asked to name the places where the majority of accidents occur. As seen in Figure 4, according to parents, most of the accidents inside the house occur in the living room and in the kitchen. Turning to the places outside the house, where most accidents occur, according to parents 54.3% of the accidents occur at the playground, 19.4% at the park and 10.8% at the street. Other places reported include the school (4.8%), the yard (2.7%) and the square (2.2%). Turning to the places where most of the accidents occur at the preschool setting, according to ECEC professionals 35.6% of the accidents occur during children's free play, mainly free play outdoors and 35.2% outside at the yard of the setting.

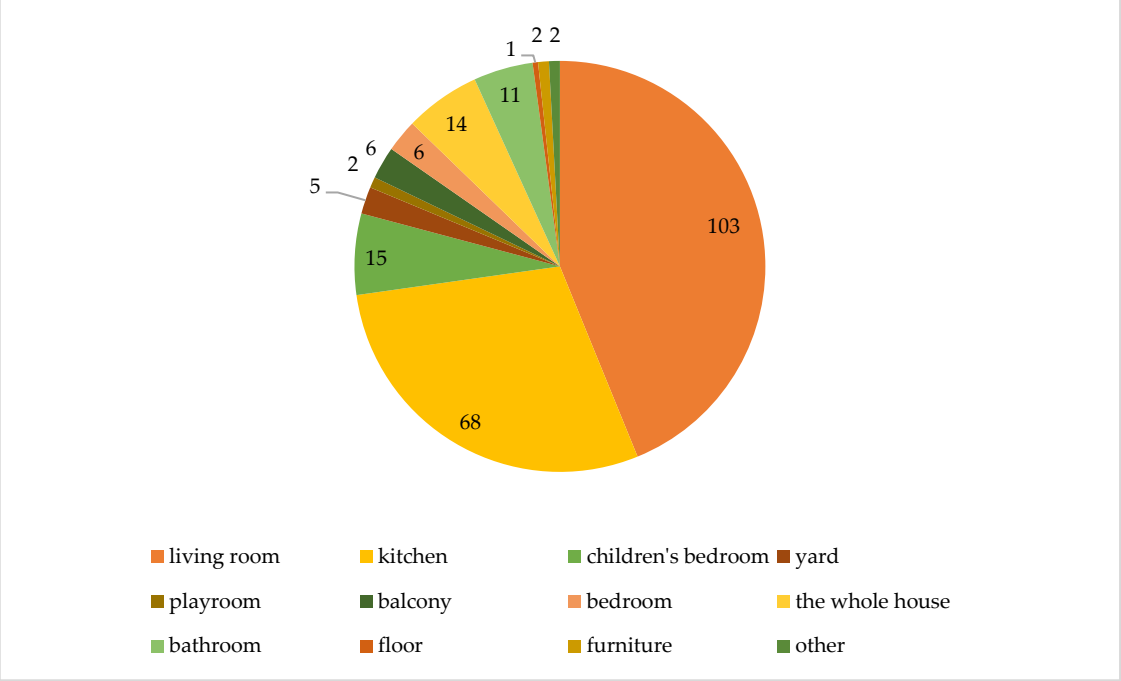

Figure 4. Places where most accidents occur within the house

Finally, participants were asked to indicate the level of their knowledge of handling a series of health-related issues and accidents. Table 4 presents the results. As seen in Table 4, with limited exceptions

the level of knowledge of both parents and ECEC professionals is medium to limited for most of the incidents that were listed. Thus,0 ECEC professionals are, according to their answers, more knowledgeable than parents in handling each of the health-related issues listed.

Table 4. Parents' and ECEC professionals' knowledge of handling health related issues

Health-related issues	Parents			ECEC professionals		
	N	Mean	S.D.	N	Mean	S.D.
Fever and Illness						
Fever	212	3.70	.998	71	3.97	1.02
Vomiting	213	3.32	1.02	72	3.79	1.07
Injuries						
Injuries	212	3.37	1.28	71	3.69	1.11
Falls	212	2.77	1.12	72	3.17	1.12
Sprain	213	2.46	1.21	71	2.65	1.13
Fractures	213	2.01	1.12	72	2.21	1.08
Tooth trauma	213	1.97	1.14	70	2.26	1.04
Head and neck injuries	212	1.79	1.02	72	2.14	1.06
Eye injury	212	1.77	.98	71	2.14	1.00
Dislocation	212	1.77	1.06	70	1.87	.99
Tooth displacement	213	1.69	1.09	72	1.75	.90
Spinal cord inury	212	1.58	.97	71	1.89	1.06
Pains						
Headache	211	3.35	1.09	71	3.42	1.19
Stomachache	213	2.84	1.03	72	3.19	1.13
Tooth pain	213	2.77	1.16	72	2.83	1.07
Pain in the ear	212	2.53	1.15	71	2.73	.99
Bites and stings						
Insect bite	213	3.31	1.06	72	3.65	.98
Bite / sting / contact with marine creatures (eg jellyfish)	213	3.10	1.12	70	3.30	1.06
Rashes	213	2.77	1.22	70	3.16	1.12
Animal / human bite	213	2.29	1.16	72	3.04	1.31
Snake bite	213	1.82	1.09	72	1.97	1.06
Wounds and bleeding						
Bleeding	213	3.07	1.04	72	3.65	.87
Bruises	213	2.99	1.18	72	3.49	1.08
Nose bleeding	213	2.70	1.16	72	3.56	1.11
Nose trauma	211	2.48	1.12	71	3.06	1.10
Tooth bleeding	213	2.11	1.20	71	2.46	.99
Bleeding from the ear	213	1.47	.93	72	1.71	.86
Effects of heat and cold						
Burns	212	2.78	1.15	71	3.08	1.01
Fire in cloths	211	2.38	1.25	72	3.21	1.64
Frostbite	213	1.93	1.14	72	2.08	1.18
Hypothermia	212	1.89	1.19	72	2.40	1.18
Breathing difficulties						
Choking	212	2.67	1.27	72	3.07	.98
Drowning	212	2.38	1.22	72	2.74	1.03
Asthma - difficulty in breathing	213	2.10	1.18	72	2.44	1.07
Allergic reactions						
Allergic reactions	213	2.54	1.16	71	2.93	1.01
Loss and disturbance of consciousness						
Faint	213	2.49	1.18	72	3.00	1.10
Loss of consiousness	213	2.42	1.19	72	2.85	1.05
CPR	212	2.16	1.36	72	2.32	1.04
Convulsions	212	1.70	1.12	72	2.31	1.17
Use of an external defibrillator	212	1.69	1.25	71	1.65	.89
Shock	212	1.61	1.05	70	1.79	.96
Poisoning						

Poisoning by ingestion of food or liquid	212	2.18	1.12	72	2.44	1.01
Poisoning by toxic gases or smoke	212	1.59	.97	72	1.99	1.55
Burns						
Heatstroke	213	1.94	1.16	72	2.44	1.09
Electric shock	212	1.79	1.10	72	2.40	1.07
Chemical burns	213	1.73	1.13	72	1.85	1.01
Chemicals in the eye	213	1.50	.87	72	1.63	.91
Lightning strike	213	1.39	.90	72	1.61	.81
Foreign body						
Foreign body in the nose	213	1.81	1.01	71	2.35	.95
Foreign body in the eye	212	1.79	1.02	72	1.99	1.01
Foreign object in the ear	213	1.55	.88	71	2.11	.99

Conclusion and Discussion

Although unintentional injuries during early childhood are a growing public health problem (WHO, 2008) and despite the fact that those injuries occur in the primary settings in which children participate, that is at home and at the preschool program, limited attention has been given to parents' and ECEC professionals' levels of knowledge of first aid provision. The present study, which is the first, to the best of our knowledge, in Greece aimed at exploring parents' and ECEC professionals' attitudes towards first aid, the levels of their knowledge of first aid provision, as well as the frequency of different types of unintentional injuries and the places where they occur more frequently. Answering those questions is of high importance as, according to Gratz (1994, p. 72), provides an insight about "how epidemiology provides information to create safer environments for children".

As far as participants' attitudes towards first aid is concerned, results of our study suggest that both parents and ECEC professionals have positive attitudes towards first aid. As in the study conducted by Abelairas-Gómez et al. (2020), participants in our study also believe that first aid is not relevant only to health professionals and that everyone should know first aid. In addition, for those parents and ECEC professionals who have been trained the main reason for attending a training was the recognition that first aid training is essential.

Yet, in our study the percentage of ECEC professionals who believe that everyone should know first aid is considerably lower (67.6%) than that of the teachers who participated in the study conducted by Abelairas-Gómez et al. (2020). The discrepancies on the percentages between our results and the results of the study conducted by Abelairas-Gómez et al. (2020) are also true about participants' perceptions on whether first aid training should be obligatory at school and at the university courses. Although parents in our study seem to be positive about first aid training, confirming previous research results (Al-Johani et al., 2018; Bánfai et al., 2015; Thein et al., 2005), the percentage of parents who believe that those who have children should know first aid is relatively low (55.9%). Kamel et al. (2014) in their study found that 77% of participating mothers believed that mothers should know first aid. ECEC professionals who participated in the study also have positive attitudes towards first aid, confirming previous research results (Ganfure et al., 2018; Ilha et al., 2021; Li et al., 2012; Sönmez et al., 2014; Yürümez et al., 2007). Yet as with parents, the percentage of ECEC professionals who believe that those who work with children should know first aid is relatively low (58.1%).

In addition, results indicate that even those who have not been trained in first aid have positive attitudes as most parents and all ECEC professionals mentioned that they would like to be trained in first aid. The main reasons for which most parents and ECEC professionals have not been trained was that the have not thought about it, they do not know where they can find a course to attend and the lack of time. This result highlights the need for first aid training and other health community organizations to run campaigns about the importance of first aid provision and publicize further first aid training courses. In addition, a collaboration among health-related organizations and preschool programs would further enhance parents' knowledge both about the importance of being trained in first aid, as well as about

available training courses in the community. The importance of the first aid training and education programs is also highlighted by the fact that the majority of parents and ECEC professionals who participated in the study mentioned that they use those programs as a primary source of information about first aid provision related issues. Health professionals and social networks are also used by parents and ECEC professionals as a source of information. This result is in line with the results of the study conducted by Bánfai et al. (2015) who also found that first aid courses, the media and health professionals are the primary source of information for parents, whereas the importance of the social networks and friends/relatives has been highlighted by other studies too (e.g. Anwar et al., 2021; Kamel et al., 2014; Vincenten et al., 2005). On the other hand, other studies have found that the primary source of information are mass and social media (e.g. Alhajjaj et al., 2021; Al-Johani et al., 2018; Anwar et al., 2021; Thein et al., 2005; Vincenten et al., 2005). Turning to ECEC professionals, previous studies have found that their primary sources of information are health professionals, the media, health institutions and driving courses (Ganfure et al., 2018; Sönmez et al., 2014).

Turning to participants' training and experience in first aid provision, as far as parents are concerned the slight majority of them (54.3%) have been trained in first aid. Thus, for most of them the training took place between 2 to 10 years before the study run. In addition, according to parents most of them have not provided first aid at work or at home. Our results partly confirm results of previous studies, as in some studies the vast majority of parents have not attended first aid courses (e.g. Alhajjaj et al., 2021; Al-Johani et al., 2018; Bassam, 2022) whereas in other studies the majority of the parents had attended first aid training (e.g. Bánfai et al., 2015). Thus, as in the study conducted by Al-Johani et al. (2018) the training that parents attended had both a theoretical and practical component. Yet our results confirm the results of previous studies in terms of parents' knowledge to handle different incidents that require first aid provision. Specifically, the average score of parents' knowledge to handle the incidents that were listed is 2.28, that is little knowledge. Other researchers (Alhajjaj et al., 2021; Al-Johani et al., 2018; Bassam, 2022; Nageh et al., 2020; Thein et al., 2005) have also found that parents have improper knowledge regarding first aid provision.

Turning to ECEC professionals' experience and training in first aid, results showed that most of the participants have been trained and that training took place 2 to 5 years before the study was conducted. This finding aligns with the findings of the study conducted by Abelairas-Gómez et al. (2020) and by Yürümez et al. (2007) who also found that the training that their participants received had taken place more than 2 years ago. Thus, for most of the ECEC professionals the training had a practical and theoretical component, and the training was provided by their organization. Previous studies however have found that the training that professionals have received was theoretical rather than practical (Yürümez et al., 2007). In addition, the majority of the participants have provided first aid either at home (55.6%) or at work (58.9%). Sönmez et al. (2014) and Ganfure et al. (2018) also found that most of the participants in their study confronted with a situation where first aid provision was required in their professional life.

However, despite the fact that the majority of the participants have been trained in first aid provision, the level of their knowledge in handling different situations is low to moderate (2.61). This result is substantiated by previous research results which have also shown that although ECEC professionals have encountered situations that required the provision of first aid they are not adequately knowledgeable to handle such situations (Abelairas-Gómez et al., 2020; Ganfure et al., 2018; Li et al., 2012; Yürümez et al., 2007).

Given that in Greece there are few data on children's accidents, the present study aimed also to map the most frequent types of accidents that occur at home and at the preschool setting. Fever, vomiting and falls have been reported as the three most common incidents that occur at the preschool program, whereas parents reported that the three most common incidents that occur at home are fever, headache, and bruises. Our results partly confirm previous results as according to other studies the most common types of injuries that happen during early childhood are falls, burns, drowning, chocking, cuts and wounds (Bánfai et al., 2015; Ellsäßer, 2017; Kamel et al., 2014; Nageh et al., 2020). Turning to the places where most of the accidents

happen, the living room and the kitchen are the most common places within the house, whereas the playground is the most common place outside the house. On the other hand, at the preschool setting most of the accidents occur outdoors primarily during children's free play.

Although the results of our study provide a picture of parents' and ECEC professionals' attitudes towards first aid, as well as about their knowledge and needs, it is important for future studies to address with larger samples these questions, as according to Abelairas-Gómez et al. (2020, p. 273) "it is necessary to establish ''what the population knows'' in order to identify ''what it needs to learn'' and determine ''what'' needs to be taught and ''how''. In addition, both the results of our study and previous studies are discouraging in relation to preschoolers' parents' and ECEC professionals' preparedness to handle unintentional injuries, despite the fact that they are so frequent during early childhood. It is highly recommended therefore for health and education organizations to cooperate (Góes et al., 2023; Sönmez et al., 2014) in order to establish a national mandatory first aid training program and in-service training programs which will aim at providing frequent trainings both to parents and ECEC professionals, in order both to enhance and to rephrase their knowledge. This is especially necessary for ECEC programs, as in Greece there are school nurses in schools from primary onwards but not in ECEC programs. Given that there are not health professionals in ECEC programs, and the high percentages of accidents during early childhood, it is important for at least one staff member to be certified in first aid provision. Providing new knowledge is not enough as first aid provision is a course offered by the universities that trained ECEC professionals.

The effects of training have been revealed by previous studies that have implemented intervention programs both with ECEC professionals and with mothers (Calandrim et al., 2017; Ilha et al., 2012; Kahriman & Karadeniz, 2018; Lee & Oh, 2018) and found that such programs enhance participants' knowledge and confidence to handle unintentional injuries and also their ability to identify safety hazards.

The fact that both in our study and in previous studies (e.g. Sönmez et al., 2014) participants have been trained in first aid but their knowledge was minimum has many implications both about the frequency of training as well as about the quality of the training. First of all, it is important to run frequent training courses in order for professionals and parents to gain confidence and to refresh their knowledge frequently. In addition, the quality of the training, either provided at school, at the university or by other organizations, needs to be carefully examined. Adult education principles and a practical component should be the main characteristics of the training. In addition, in order to be effective, the training should include, according to Sönmez et al. (2014, p. 244-245) "visuals, applications, question-answer techniques and methods and small group exercises".

The intersectoral cooperation between health and education organizations it is necessary not only for training in first aid but also for sensitizing both parents and ECEC professionals about the serious consequences of unintentional injuries during early childhood, as well as about safety precautions that need to be taken both at home and the preschool. According to Góes et al. (2023, p. 92) the goal is to "expand the specific actions of promotion, prevention, and health care, including the reduction of morbidity and mortality due to accidents in the context of early child rearing". In order to increase awareness about the importance of first aid training and safety hazards during early childhood, other types of interventions can also be beneficial. For example, television clips (Yürümez et al., 2007), mass media clips (Bassam, 2022; Yürümez et al., 2007) and counseling (Bassam, 2022) have also been found to be effective. Moreover, children's training in safety and first aid is also important as according to research results (e.g. Bollig et al., 2011) children as young as 4 to 5 years are able to learn and apply basic first aid.

To conclude; given the high rates of unintentional injuries during early childhood it is important to explore if parents and ECEC professionals have adequate knowledge to handle such injuries. The present study has revealed that both participants who have been trained in first aid provision and those who have not received training in the past have positive attitudes towards first aid and believe that first aid training should be addressed to the whole community and not only to health professionals. This finding is in line with previous research results. Yet, the results revealed that the percentages of professionals who believe

that everyone should know first aid are lower than in other studies. In addition, in Greece fewer parents and professionals believe that those who have children and/or work with children should have first aid knowledge, as compared to parents and professionals in other countries.

The study has also revealed that the reasons why participants have not been trained in first aid include that they have not thought about it, they do not know where they can be trained, and they lack time. Those barriers to first aid training highlight the need raise awareness about the importance of having first aid knowledge, especially among professionals who work with preschoolers and preschoolers' parents. Health related services and the Ministry of Health and Education could run campaigns to raise awareness. In addition, first aid training should be incorporated in curricula, across education levels. In order to combat barriers related to time constraints it would be advisable to provide training during working hours, in the context of ones' working place. In addition, given that the present study found that although the slight majority of the participants have been trained, they still have little knowledge on how to handle incidents that can occur both at home and at school, it is important to reconsider both the content and the frequency that it is provided.

Given that this is the first, to the best of our knowledge, study in Greece exploring the attitudes and knowledge of ECEC professionals' and preschoolers' parents towards first day, it is important to conduct further studies on this issue. Although the results of the present study give a picture of the epidemiology of early childhood injuries in Greece, the sample is small and the results cannot be generalized. Future studies should collect data from larger samples as well from different regions of the country.

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Authors' Declarations

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Research Article

A systematic review of studies investigating quality of inclusive preschool classrooms

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Abstract: Inclusion of young children with disabilities in early childhood settings that are primarily designed for typically developing children is a recommended practice. Although several reviews have summarized the literature focused on the quality of preschool classrooms in general, extant literature does not include a study that specifically summarized results of studies focused on investigating quality of inclusive preschool classrooms. The purpose of this systematic literature review was to identify studies focused on examining quality of inclusive preschool classrooms, determine characteristic features of these studies and summarize information about the overall quality of inclusive preschool classrooms. Twenty-five articles met the inclusion criteria and were analyzed using a 27-item coding system developed by the researchers. The findings reveal a lack of consistent reporting of classroom demographics and teacher characteristics across the studies. Furthermore, the review identifies inconsistencies in reporting practices related to the roles and training of individuals conducting classroom quality measures, raising concerns about data reliability and validity. Additionally, the findings suggest areas for improvement in instructional support in inclusive classrooms, calling for strategies to enhance teacher training and professional development. The results underscore differences in preschool classroom quality across countries, emphasizing the necessity for global efforts and tailored interventions to improve early childhood education quality.

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Inclusive preschool; Early childhood quality; Early childhood inclusion

Introduction

Inclusion of young children with disabilities is a recommended practice in early childhood (EC) and early childhood special education (ECSE) and legally mandated by the Individuals with Disabilities Education Act in the United States (IDEA) (Individuals with Disabilities Education Act in the United States [IDEA], 2004; Musgrove, 2012). As a result of education policies and research findings supporting inclusion, the number of children with disabilities receiving educational and developmental services within the context of inclusive preschool settings has gradually increased over the years. According to the most recent annual report of the Office of Special Education Programs (OSEP) to the Congress, the percentage of children with disabilities who spend at least part of their week in regular early childhood programs increased from 50% in 2009 to 64.7% in 2019 (Office of Special Education and Rehabilitative Services, 2011; 2021).

Similarly, increasing access to EC and ECSE has been a priority in the European Union (EU) since 1992. Over the years, various policy adjustments have been made at the EU level to achieve this goal. While early EU policies were linked to labor market needs, especially regarding employability and equality, recent efforts have focused on reforms aimed at creating high-quality, fair, and efficient education and training systems. In 2009, the EU Council launched a strategic framework for European cooperation in education and training until 2020, with the objective of increasing participation in EC and ECSE for all

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individuals (European Agency for Special Needs and Inclusive Education [EASNIE], 2017). By 2014, 32 million children in Europe were eligible for the EC provisions of the European Commission, with approximately 15 million needing ECSE (European Commission, 2013; EASNIE, 2017). To address this need, the EASNIE (2024) has made it a mission to facilitate access to EC and ECSE, particularly for the most vulnerable groups—children with disabilities, migrants, and children at risk. The Agency's efforts focus on supporting educators, providing access to resources, fostering interdisciplinary cooperation, and promoting parental collaboration. EASNIE also advocates for the accountable use of public funding and leadership models to ensure that EC and ECSE services are both high quality and widely accessible, focusing on the holistic development of every child (EASNIE, 2024).

Although there is not a commonly accepted or agreed upon definition of inclusion in the field of EC and ECSE, the Division of Early Childhood (DEC) and the National Association for the Education of Young Children (NAEYC) described defining feature of early childhood inclusion in their joint position statement as (a) access, (b) participation and (c) supports. *Access* refers to children with and without disabilities being able to access all learning opportunities and environments of the early childhood program. *Participation* refers to teachers making the accommodations needed for individual needs of the children to encourage active engagement in the early childhood program. *Supports* refers to resources and professional development provided to form a strong system of support for children who need additional support (e.g., disabilities or at-risk children) and professional working with these children (DEC/NAEYC, 2009).

Inclusive education in preschool classrooms can be beneficial for children with and without disabilities. For children with disabilities, inclusive programs provide the environment to encourage social engagement with peers, social acceptance by peers and progress toward individualized education plan goals (Green et al., 2014; Odom et al., 2011). Several studies compared the progress children with disabilities made in inclusive preschool classrooms and separate preschool settings. Findings showed that children with disabilities in inclusive preschool classrooms showed greater progress in cognitive and communication development in comparison to those who were placed in segregated special education settings (Holahan & Costenbader, 2000; Lawrence et al., 2016). Children without disabilities also benefit from inclusive education. Research has shown that children without disabilities develop positive attitudes, empathy, and great compassion for individuals with disabilities (Diamond & Huang, 2005).

Success of inclusive practices in early childhood depends on several factors including environmental quality of the classrooms in which children with disabilities are supported along with their typically developing peers. Quality as it applies to early childhood does not have a universally implemented definition. One definition of quality is "a collection of measurable characteristics in the childcare environment that affect children's social and cognitive development (Siraj-Blatchford & Wong, 1999, p. 10)." Researchers such as Pianta et al. (2016) have provided dimensions of quality in preschool classrooms. Structural quality refers to the features and characteristics of a preschool classroom such as the hours of operation and the teacher's education and experience levels. Classroom environment quality refers to the activities and spaces indoor and outdoor in a preschool classroom including the learning experiences, furniture, and equipment. Quality teacher and student interactions occur on a daily basis and foster an environment for development to occur. Clifford et al. (2010) base their view of quality on the needs of the children; maintaining their health and safety, encouraging positive relationships, and stimulating their learning through experiences.

Research shows that children who attend high-quality early childhood programs achieve higher scores on standardized cognitive and language tests than their peers who attended early childhood programs with lower quality ratings (Burchinal et al., 2000; Cunningham, 2010). High quality early childhood programs provide children with developmentally appropriate curriculum and activities and employ early childhood teachers who are responsive to individual children's needs and understand how to meet these individualized needs. Early childhood educators in high quality programs are able to build stronger attachments with children and provide an environment that supports positive experiences (Vandell & Wolfe, 2000). Studies showed that inclusive preschool classrooms did not result in classrooms

with less quality. For example, Hestenes et al. (2008) found that inclusive classrooms had higher global quality than classrooms that did not enroll children with disabilities. Moreover, Odom et al. (2011) reported positive gains in cognitive, communication and motor skills for children with disabilities because of the individualized support provided in inclusive settings.

Numerous studies have examined the quality of early childhood classrooms. Several reviews of literature summarized the findings of these studies. For example, Aguiar and Aguiar (2020) reviewed 25 studies that focused on quality of early childhood programs that enrolled children from low socioeconomic status and at risk. Classroom quality in these studies were assessed using the Early Childhood Environment Rating Scales (ECERS) or Classroom Assessment Scoring System (CLASS) scales. Findings showed that classrooms with lower quality scores did not meet the developmental needs of children from low socioeconomic status or minorities (e.g., Hispanic/Latino). Slot (2018) reviewed 72 studies and reported consensus in lower classroom enrollment providing better literacy and vocabulary skills and emotional regulation. Although several reviews (e.g., Aguiar & Aguiar, 2020; Slot, 2018) have summarized the literature focused on the quality of preschool classrooms in general, extant literature does not include a study that specifically summarized results of studies focused on investigating quality of inclusive preschool classrooms.

Purpose and Research Questions

The purpose of this systematic review is to identify studies focused on examining quality of inclusive preschool classrooms, determine characteristic features of these studies and summarize information about the overall quality of inclusive preschool classrooms. This review is guided by the following research questions:

1. What are the descriptive characteristics of the studies focused on examining the quality of inclusive preschool classrooms?
2. How was quality measured in the studies focused examining the quality of inclusive preschool classrooms?
3. What is the overall quality reported in the studies focused on examining the quality of inclusive preschool classrooms?

Method

Inclusion and Exclusion Criteria

In order for a study to be included in this literature review, it had to meet four criteria. First, the study had to be conducted in preschool classrooms that enrolled both children with and without disabilities who are between the ages of three to five years. Second, the study had to measure classroom quality as the main purpose of the study. Third, the article had to be published in a peer reviewed journal. Fourth, the full text of the article had to be available in English. Articles were excluded if they included classrooms outside of preschool range and separate data were not provided for preschool classrooms. Articles that included childcare homes or regular preschool classrooms with no children with disabilities enrolled were also excluded from the review. There were no date restrictions included in the criteria for inclusion or exclusion.

Article Search

The process to search and identify articles to include in this review was completed in two stages. The first stage included an online database search using a set of predetermined search terms. The databases used for the search included Academic Search Complete, APA Psychinfo, Child Development & Adolescent Studies (connecting with EBSCO), ERIC, Education Source, PubMed, Scopus, and SAGE. Combinations of the following search terms were used to conduct the data base search: early childhood, preschool, early child development, early childhood development, child care, childcare, special education, disabilities, disabled, special needs, inclusive, inclusion, classroom quality, program quality, quality

ratings, early childhood environment rating scale, inclusive classroom profile, classroom assessment scoring system, assessing classroom sociocultural equity scale, brief early childhood quality inventory, or developmental environment rating scale. In the second stage, a hand search of the reference and citation lists of articles that qualified for the current review was conducted. In this stage, the curricula vitae of researchers who conduct studies focused on early childhood classroom quality were also reviewed to identify additional studies.

Screening and Coding

As shown in Figure 1 (PRISMA flow diagram; Page et al., 2021), the two-stage search process described above yielded 427 articles. Once the duplicate articles were removed, a total of 184 unique articles remained. These 184 articles were screened using the inclusion criteria by reviewing the title and abstract. When it was not clear whether the study met the inclusion criteria based on the title or abstract, the full text of the article was reviewed. Twenty-five articles met the inclusion criteria. The studies were mainly excluded because they did not include classrooms serving both children with and without disabilities or age range of the children served in the classrooms were out of range. A coding form with 27 items was developed to extract data from qualifying articles. These 27 items were grouped under seven categories including purpose, setting (type of program), adult participants (e.g., role, education, experience), child participants (e.g., age, gender, disability), quality measurement tool(s) used, administration of quality measurement tool (i.e., credentials, training), and results.

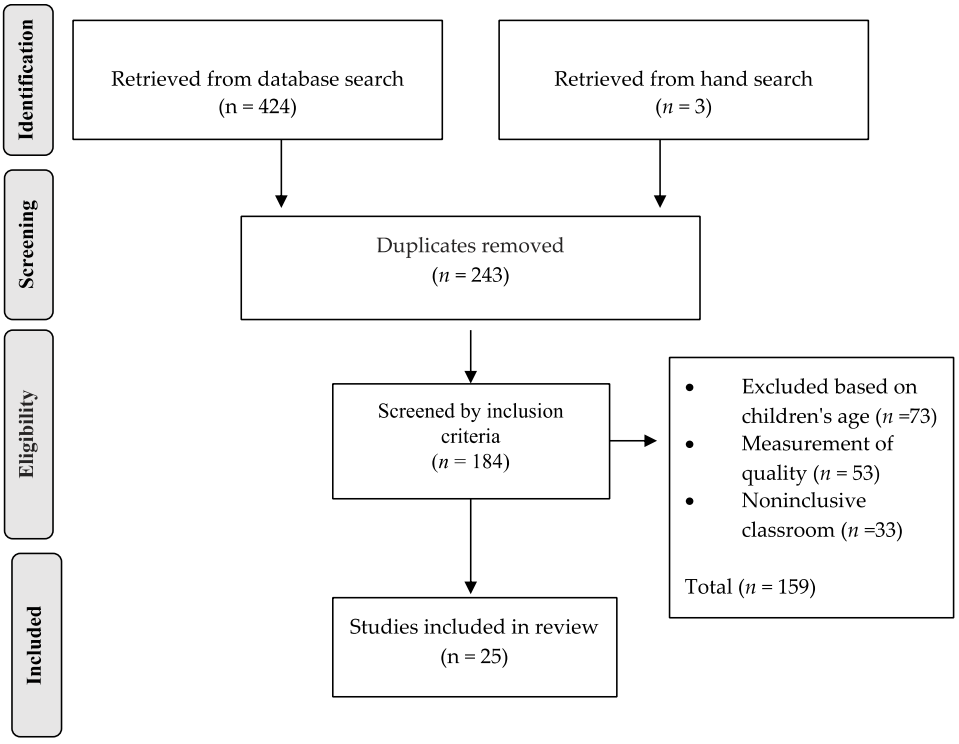

Figure 1. Article search process flowchart

Reliability

Interrater reliability data were collected for screening of the articles based on inclusion and exclusion criteria and coding descriptive information from studies qualified for this review. For this purpose, a second researcher screened and coded 20% of the articles. Interrater reliability percentage scores were calculated using the following formula: (agreement/agreement + disagreement) x 100 (Kazdin, 2010). The interrater reliability coefficients were 99% for screening and 99% for coding. Cohen's Kappa coefficient

(Cohen, 1960) was also calculated as an additional measure of interrater reliability for the screening phase, and it was reported to be 0.94, indicating very strong agreement among raters.

Results

The 25 studies that met the inclusion criteria were published from 1993 through 2022. Four studies (16%) were conducted in the 1990s, 3 studies (12%) from 2000 to 2009, 16 studies (64%) from 2010 to 2019 and 2 studies (8%) from 2020 to 2022. Nineteen of the 25 studies (76%) were designed to provide descriptive analysis of inclusive preschool classroom quality while the remaining 6 studies (24%) compared quality of inclusive and noninclusive preschool classrooms. The studies were conducted in various locations around the world including 16 studies in the United States (*n* = 64%), 2 studies in Greece (*n* = 8%), 2 studies in Portugal (*n* = 8%), 2 studies in Spain (*n* = 8%), 1 study in Botswana (*n* = 4%), 1 study in Denmark (*n* = 4%), and 1 study in Türkiye (*n* = 4%).

Descriptive Characteristics of the Studies

Study Settings

All 25 studies identified the type of preschool settings in which the classroom quality was measured. Twelve studies included more than one type of preschool setting. Across the 25 studies, settings included private child care programs in 14 studies (*n* = 603), public preschool classrooms (located inside a public-school setting) in 11 studies (*n* = 744), preschool classroom in Head Start programs in 10 studies (*n* = 161), religious child care program in 2 studies (*n* = 44), university child care program in 1 study (*n* = 6), and developmental day program in 1 study (*n* = 13). In one study, the setting was identified as preschools (*n* = 1357), 1 study provided the type of preschool setting but did not separate the total number of settings into each type (*n* = 36) and 1 study only provided the type of preschool setting without reporting the total number of settings into each type. Table 1 presents descriptive characteristics of studies included in this review.

Attributes of Study Participants

Teacher Participants. Seventeen of the 25 studies (68%) provided data on the number of preschool teachers included in the studies (*n* = 2633). Six studies (24%) provided the mean ages of the teachers (*M* = 41.83). Ten studies (40%) conducted in the United States reported information about race of adult participants while six studies from the United States and studies that were implemented in other countries did not report such data. Six studies (24%) reported the race of the teachers in numeric form (Black = 251, White = 240, Native American = 2, Hispanic = 7, Latino = 1, Asian Pacific Islander = 3, Mixed Races = 4, Other = 1) while four studies (16%) reported the information in percentages (Black = 1.5%-50%, White = 49%-95%, Native American = 1%-2%, Hispanic = 1%-3%, Latino = 6%, Asian Pacific Islander = 10%, Mixed Races = 1.5%). Thirteen studies (52%) reported the gender of the classroom teachers (range = 93.8% to 100% female).

Six studies (24%) reported teachers' level of education in numeric form (high school = 59, child care credential = 96, associate's = 16, some college = 10, bachelor's = 182, master's = 79, not specified = 20) while nine studies (36%) reported this information in percentages (high school = 9.4%-70%, child care credential = 6%-30.5%, associate's = 11%-27%, bachelor's = 17.2%-100%, master's = 12%-75%, not specified=7%). One study (4%) provided a mean number of years in education for teachers (*M* = 15.18 years). Twelve studies (48%) reported a mean for teachers' years of experience (range = 5.64 - 22.74) while three studies (12%) provided a range for years of teacher's experience (e.g., 2 - 6 years = 18 teachers, 7-11 years = 23 teachers, 5-14 years = 10 teachers, 12-21 years = 6 teachers). One study (4%) provided whether teachers received any training or courses focused on inclusion (yes = 19 teachers, no = 28 teachers).

Table 1. Study Participants and Setting

Reference/ Country	Setting	Educators					Students			
		Total	Age (in years)	Race - Gender	Education/ PD	Years of Experience	Total	Age (in months)	Race - Gender	Disabilities
Aguiar et al. (2019) Portugal	39 HS 5 PRI	44	48	N/A – 1 M	NA	22.74	222 (42 w/d)	63.75	N/A – INC: 90 M, 132 F, NI: 29 M	12 DD, 9 ASD, 7 OTR, 4 UD, 3 RD, 3 SLD, 2 DS, 2 MIN
Aguiar et al. (2010) Portugal	64 PUB	N/A	46.81	N/A – N/A	N/A	INC:12.33, NI:22.67	1121	62.74	N/A – 594 M	403 DD, 280 ASD, 107 CP, 102 OTR, 71 MUL, 53 ADHD, 35 DS, 35 HEA, 35 SLD
Bakkaloglu et al. (2019) Türkiye	13 PRI	47	25+	N/A – N/A	Training in Inclusion: 19 Yes, 28 No	2+	N/A	39+	N/A – N/A	12 ID, 11 SLP, 10 ASD, 9 PHY, 5 HEA
Buysse et al. (1999) United States	115 PRI 38 REL 20 HS 7 PUB	180	N/A	N/A – N/A	INC: 9 HS, 33 CC, 11 BAC, 9 NA NI: 26 HS, 62 CC, 19 BAC, 11 NA	INC 7.65, NI 7.06	N/A	N//A	N/A – N/A	N/A
Cadima et al. (2018) Spain	130 PUB 48 PRI	N/A	N/A	N/A – 99% F	12% MAS	21.18	N/A	N/A	N/A – N/A	N/A
Campbell et al. (2005) United States	228 PUB	228	39.86	177 B, 50 W, 1 L – 224 F	56% HS, 11% ASC, 22% BAC, 6% CC	10.57	N/A	N/A	N/A – N/A	N/A
Chhabra et al. (2018) Botswana	34 PRI	N/A	N/A	N/A – 93.8% F	36% EDU, 31% CC, 17% BAC, 9% HS, 7% OTH	Range: 1 - 10	N/A	N/A	N/A – N/A	10 SLD, 10 TS, 3 CP, 3 DS, 2 ASD, 2 HEA
Classen and Westbrook. (2022) United States	26 PRI, 2 HS, 6 REL, 6 UNV	83	N/A	45 B, 36 W, 2 MD – 83 F	7 MAS, 27 BAC, 15 ASC, 10 Some College 24 HS	N/A	N/A	N/A	N/A – N/A	N/A
Clawson and Luz. (2008) United States	7 HS 4 PRI	11	N/A	8 W, 1 H, 1 B, 1 O – N/A	7 MAS, 4 BAC	N/A	60 (30 w/d)	56.52	49 W – 24 M	40 SLD, 28 BEH, 16 PHY, 6 COG, 4 VIS
Coelho et al., (2019)	39 PRI	39	49.49	N/A – 100% F	100% BAC	10.86	184 (104 w/d)	47.06	N/A – N/A	40 RD, 20 DD, 17 ASD, 4 CP, 3 DS, 2 SLD, 2 ADHD, 1 PHY, 1 HEA

Spain										
File and Kontos (1993) United States	PRI, UNV	36	N/A	N/A – 35 F, 1 M	30% BAC	N/A	28	56	N/A – 24 M	14 COG/SLD
Fyssa and Vlachou (2015) Greece	52 PUB	96	N/A	N/A – N/A	95- BAC	N/A	93 w/d	72	N/A – 65 M	38 ASD, 26 DD, 15 ID, 13 NEU, 1 HEA
Grisham-Brown et al.(2010) United States	64 PRI 2 HS	59	N/A	INC: 16% B, 84% W, NI: 9% B, 2% NAT, 88 % W, 2% MR, – N/A	INC: 67% HS, 27% BAC NI: 50% HS, 54% BAC	NI 5.64, INC 6.38	N/A	N/A	N/A – N/A	42% SLD+MD, 24% PHY, 18% SEL, 3% COG
Hestenes et al. (2008) United States	1357 Pre-school	1357	N/A	Study 1: N/A, Study 2: 49% W, 50% B, 1% H – 72 F	Study 1: N/A, Study 2: 70% HS 30% BAC	N/A	N/A	N/A	N/A – N/A	Study 1: 658 SLD, 240 DD, 78 PHY, 52 OTH, 46 COG, 40 ASD, 27 BEH, 26 ADHD, 16 DS, Study 2: 11 ADHD, 11 SPD, 10 DD, 10 PHY 7 ASD, 3 BEH, 3 DS, 2 OTH, 1 COG, Study 2: N/A
Jeon et al. (2010) United States	54 HS 52 PRI	106	N/A	64 W, 22 B, 6 H, 2 API – 106 F	15.18	10.17	138	62.16	78 W, 34 B, 16 H, 10 O – 69 M	N/A
Keesbury (2015) United States	5 PUB	N/A	N/A	N/A – N/A	N/A	N/A	34 (20 w/d)	N/A	N/A – 19 M	N/A
Kontos et al. (1998) United States	PUB, HS, PRI, UNV	N/A	N/A	N/A – N/A	N/A	N/A	48	53.16	N/A – N/A	14 COG, 14 SLD, 8 PHY, 4 ASD
La Paro et al. (1998) United States	16 PRI 7 HS 33 PUB	N/A	NI: 36.38 INC: 39.66	INC: 79% W, 17% B, 3% H, NI: 69% W, 28% B, 3% H – N/A	INC: 62% BAC NI: 100% BAC	INC: 11.39NI:10.30	N/A	N/A	N/A – N/A	N/A

Muccio et al. (2014) United States	9 HS	71	N/A	N/A – N/A	N/A	N/A	N/A	N/A	32%-56% B, 4%-42% W, 2%-4% AIP 3%-13% NAT, 29-36% MD, 5%-10%MR 7% O - N/A	N/A
Næsby (2020) Denmark	88 PRI	N/A	N/A	N/A – N/A	N/A	N/A	N/A	N/A	N/A – N/A	N/A
Pelatti et al. (2016) United States	85 PUB 79 PRI	N/A	N/A	INC: 95% W, 2% NAT, 1.5% B, 1.5% AIP, NI: 62% W 21% B, 10% AIP, 6% L 1% NAT - INC: 99% F, NI: 95% F,	INC: 75% MAS, 25% BAC, NI: 37% BAC, 27% ASC, 18% MAS, 18% HS	INC: 11.6, NI: 8.44	1192 (96 w/d)	52	723 W, 272 B, 46 MR, 73 L, 78 O – 681 M	N/A
Soukakou et al. (2014) United States	13 HS 20 PRI 5 PUB 13 DEV	150	N/A	N/A – N/A	HS: 54% BAC, PUB: 100% BAC DD: 92% BAC, CC: 25% BAC	HS 13.62 PRI 12.85 PUB 5.60 DD 8.10	150 w/d	4.43	N/A – N/A	SLD; 38%, DD; 37%, ASD: 12%, OTR: 8%, HEA: 2%, MD: 1%, PHY: 1%, VIS: 1%,
Stanton-Chapman et al. (2016) United States	10 HS	10	28.8	4 W, 4 B, 2 MR – 9 F, 1 M	4 MAS , 4 BAC, 1 CC, 1 ASC	Range: 5-14.	179	N/A	88 B, 56 W, 35 H – 91 M	14 SLD,11 DD, 11 ESL, 2 ASD
Vlachou and Fyssa (2016) Greece	52 PUB	96	N/A	N/A – 94 F	N/A	N/A	93 w/d	72.68	N/A – 65 M	38 ASD, 26 DD, 15 ID, 13 NEU, 1 HEA
Yeomans-Maldonado et al. (2019) US	83 PUB	83	N/A	78 W, 2 B, 2 NAT, 1 AIP – 82 F	22 BAC 61 MAS	12.66	670	52	438 W, 99 MD, 62 B, 30 L, 41 O, 436 M	N/A

Notes. *Types of Programs*: INC: Inclusive; NI: Noninclusive; HS: Head Start; PUB: Public School PreK; PRI: Private or Community Child Care; REL: Religious; UNV: University; DEV: Developmental Day Program. *Education Levels/Professional Development:* HS: High School; CC: Child Care Credential; ASC: Associates; BAC: Bachelors; MAS: Masters. *Total Children:* w/d: With Disabilities; *Race:* B: Black/African American; W: White; L: Latino; H: Hispanic; NAT: Native American; AIP: Asian Pacific Islander; MR: Multi-Racial; O: Other; MD: Missing Data. *Gender:* F: Female; M: Male. *Type of Disability:* ASD: Autism Spectrum Disorder; BEH: Behavior; COG: Cognitive Delays; CP: Cerebral Palsy; DD: Developmental Delays; ESL: English As Second Language; FMD: Fine Motor Delay; GMD: Gross Motor Delay; HEA: Hearing Impairment; ID: Intellectual Delays; MD: Multiple Disabilities; MIN: Missing Information; NEU: Neurological Delay; OTR: Other; PHY: Physical Delay; RD: Rare Disorder; SEN: Sensory Delay; SLD: Speech/Language Delays; TS: Turner Syndrome; VIS: Vision Impairment.

Table 2. Measurement of classroom quality

Reference/Country	Measure	Observer/Qualification/Training	Reliability (Frequency/IOA Score)
Aguiar et al. (2019)/Portugal	CLASS	4 certified independent observers; 2-day training; Trained to a reliability standard of 80%	
Aguiar et al. (2010)/Portugal	QuIEM	N/A	11% of classrooms; Mean IOA range across subscales = 91%-96%
Bakkaloglu et al. (2019)/Türkiye	ICP	N/A	IOA = 92%.
Buysse et al. (1999)/United States	ECERS	N/A	Mean IOA = 86% (range = 75% - 92%)
Cadima et al. (2018)/Spain	CLASS	2-day training; certification test; Reached reliability criterion (80%)	N/A
Campbell et al. (2005)/ United States	ECERS	14 observers; Trained to reliability using videotapes; Live observation with a trained rater for a minimum of three observations or until IOA of greater than 85% on each subscale was achieved.	N/A
Chhabra et al. (2018)/Botswana	ICP	N/A	N/A
Classen and Westbrook (2022)/United States	ICP	Formal level 2 reliability training with a certified ICP training team; Trained to a reliability standard of 80%	N/A
Clawson and Luz. (2008)/United States	ECERS-R	Two research assistants; 24 hours of training; Trained to a reliability standard of 85%	17% of observations; Mean IOA = 90% (range = 75% - 95%), mean kappa = .96 (range .82–.96)
Coelho et al. (2019)/Spain	CLASS	2 independent observers; Trained before data collection; Trained to a reliability standard of 80%	25% of the observations; Exact IOA = 67%, IOA within one point = 99.50%
File and Kontos (1993)/United States	ECERS	IOA prior to data collection = 94%	20% of the classrooms, Mean IOA = 94%
Fyssa and Vlachou (2015)/Greece	ICP	Formal ICP reliability training; 2-day training program	Mean IOA = 92.5% (range = 87.3% - 98.1%), mean kappa = .87
Grisham-Brown et al. (2010)/United States	ECERS-R	Observers were trained in ECERS-R	
Hestenes et al. (2008)/United States	ECERS-R	Trained evaluators; Extensive training; Trained to a reliability standard of 85%	Study 1: Met a minimum of 85% reliability. Study 2: Mean interrater reliability = 92% (range = 86%–98%)
Jeon et al. (2010)/United States	ECERS-R	Trained research assistants: IOA within one-point was at least 85%	N/A
Keesbury (2015)/United States	ECERS-R	Smart Start Evaluators	N/A
Kontos et al. (1998)/United States	ECERS	2 trained graduate students	Mean IOA = 93%, mean kappa = .86

La Paro et al. (1998)/United States	ECERS	3 observers were trained by watching videotapes and visiting classrooms; Trained to a reliability standard	N/A
Muccio et al. (2014)/United States	ICP	N/A	N/A
Næsby (2020)/Denmark	ECERS-3	2 certified observers were trained	N/A
Pelatti et al. (2016)/ United States	CLASS	2-day CLASS training; IOA of 90 % agreement with 6 master-coded videos.	Mean IOA = 92 %
Soukakou et al. (2014)/United States	ECERS-R ICP	4 Trained evaluators; ICP 3 hr. training and 4 hr. reliability observations; Met reliability standard of 85% IOA	Mean IOA = 98% (range = 91% - 100%)
Stanton-Chapman et al. (2016)/United States	ECERS-R CLASS	2 research associates and 2 master's students; Trained to a reliability standard of 90%	N/A
Vlachou and Fyssa (2016)/Greece	ICP	Research completed a reliability training	9.6% of the classrooms; Mean IOA= 92.5% (range = 87.3% - 98.1%)
Yeomans-Maldonado et al. (2019)/United States	CLASS	2-day training; Trained to a reliability standard of 90%	N/A

Note. INC: Inclusive; NI: Noninclusive; M: Mean Scores; PC: Personal care; FR: Furnishings; LA: Language reasoning; FG: Fine and gross motor; CA: Creative activities; SD: Social development; AN: Adult needs; SF: Space and furnishings; LE: Learning activities; IN: Interactions, PS: Program structure; PA: Parents and staff; ECERS: Early Childhood Environment Rating Scale

Child Participants. Fourteen studies (56%) included data for the number of preschool children enrolled in preschool classrooms. Eight of the fourteen studies (57%) included data that differentiated between children with and without disabilities. A total of 4258 preschool children participated in these studies and 628 had a disability. Child gender was reported in 11 of the 25 studies (44%). A total of 2187 males and 2025 females participated in these studies. Thirteen studies (52%) reported the age of the children. One of the thirteen studies provided the range of ages, and twelve studies provided the mean. Range of mean age reported across studies was 52 months – 72.68 months. Fourteen studies (56%) included data on the types of disabilities children had. Eight studies (28%) included children that were characterized as developmentally delayed or at risk for developmental delay. Other disability categories reported were speech and language delay (n = 12 studies), autism spectrum disorder (n = 11 studies), physical disability (n = 7 studies), cognitive or neurological delays (n = 7 studies), hearing impairment (n = 7 studies), Down syndrome (n = 6 studies), cerebral palsy (n = 3 studies), attention deficit hyperactivity disorder (n = 3 studies), multiple disabilities (n = 2 studies), other disabilities (n = 10; for example, vision impairment, social emotional delay). Only 6 of the 25 studies (24%) reported data regarding the race of preschool children.

Measurement of Quality

Measures Used

Across the 25 studies, 23 (92%) used one classroom quality measure while 2 (8%) used two measures of classroom quality. Across the studies, four classroom quality measures were used: Early Childhood Environment Ratings Scale (ECERS; n = 13), Inclusive Classroom Profile (ICP; n = 7), Classroom Assessment Scoring System (CLASS, n = 6), and Quality of Inclusive Experiences Measure (QuIEM; n = 1). Table 2 presents information about measurement of classroom quality across studies.

The original version of ECERS (Harms & Clifford, 1980) was introduced in 1980. As one of the initial measures of early childhood classroom quality, ECERS became a commonly used measure of quality during the 1980's. In 2005, a revised edition, ECERS-R (Harms et al., 2005) was introduced. The revised edition expanded the notes for clarification and combined or deleted redundant indicators. Examples of how to meet quality standards for diversity and inclusion were added to the notes for clarification. In 2015, a revised edition, ECERS-3 (Harms et al., 2015) was introduced. ECERS-3 revised the beginning age from 2 ½ to 3 years old. The teacher interview portion has been removed and an increased emphasis on language and math has been incorporated. Indicator 37, provisions for children with disabilities, has also been removed in ECERS-3. ECERS and ECERS-R have 7 subscales with a total of 37 and 43 items, respectively while original ECERS-3 have 35 items under 6 subscales. Each item is individually scored on a scale between 1 (inadequate) and 7 (excellent), with higher scores indicating better quality.

The QuIEM was developed by Wolery et al. (2000) to measure the quality of inclusive experiences in conjunction with other quality assessment tools. The QuIEM was specifically designed to address the quality of experiences for children with disabilities and comprised of 7 areas. The measure utilizes a 5-point scoring system, with higher scores denoting better quality. It is intended to assist in identifying areas where improvement is needed and to help guide program planning and implementation to enhance the quality of inclusive experiences for children with disabilities.

The CLASS is developed by Pianta et al. (2008) as an observation instrument that evaluate the quality of teacher-child interactions in center-based preschool classrooms. CLASS contains 10 dimensions under three domains: Emotional Support, Classroom Organization, and Instructional Support. Each dimension is rated based on a 7-point scale with a score of 1-2 meaning low levels of teacher-child interactions and 6-7 meaning the teacher and child interactions occurred consistently.

The ICP is a structured observation rating scale designed to evaluate the quality of provisions and daily practices that support the developmental needs of children with disabilities in early childhood settings serving children ages 2–5. The scale was developed to complement other scales that measure classroom quality (Soukakou, 2012). The ICP contains 12 key practices/items. Each item on the ICP is rated using a 7-point rating scale ranging from 1 (practices considered highly inadequate for promoting

children's active participation in the group and meeting their individual needs) to 7 (practices that promote to the highest degree children's active participation in the group through individualized supports).

Observer Characteristics

Seven studies (28%) of the 25 reported who and how many observers were included. These included 5 research assistants in 3 studies, 4 ttained evaluators in 1 study, 4 graduate students in 2 studies, and 2 authors in 2 studies. In 5 studies (20%), researchers reported employing 25 independent observers (e.g., doctoral students, researchers, trained observers) for data collection. However, they did not specify the role or credentials of these observers. Three of the 25 studies (12%) included who the observers were but did not include how many. Ten studies (40%) did not specify who or how many observers were employed.

Observer Training

Nineteen of the 25 studies (76%) reported that the observers were trained prior to collecting data for the study. Of these 19 studies, 18 studies (72%) reported that the observers met a required reliability criteria before collecting data. Twelve of the studies (48%) reported the reliability criterion required for observers to become a reliable observer during the training (range = 80% - 90%).

Reliability of Classroom Quality Ratings

Interobserver agreement (IOA) reliability data was reported in 14 of 25 studies (56%). The mean IOA ranged between 86% - 99.5% across the 14 studies. Five of the 25 studies (20%) reported the percentage of classrooms in which the IOA reliability data were collected (range = 9.6% - 25%).

Classroom Quality Reported

As noted earlier, the quality of inclusive classrooms was evaluated using four measures including ECERS measures, ICP, CLASS, and QuIEM. Results obtained from each measure were presented separately in the following section.

ECERS, ECER-R and ECERS-3

As seen in Table 3, 13 studies used a version of the ECERS as the measurement tool. This includes five studies using ECERS (Harms & Clifford, 1980), seven studies using ECERS-R (Harms et al., 2005) and one study using ECERS-3 (Harms et al., 2015). Of the five studies using ECERS (Harms & Clifford, 1980), three studies reported an overall mean score for all ECERS subscales combined (range = 4.51-4.8) and two studies reported individual mean subscale scores (range of mean scores across studies; Personal Care = 3.25 - 4.72, Furnishings = 3.28 - 4.41, Language Reasoning = 2.9 - 4.38, Fine/Gross Motor = 3.44 - 4.64, Creative Activities = 2.98 - 4.45, Social Development = 2.83 - 3.99, and Adult Needs = 3.5 - 4.49)

Of the seven studies using ECERS-R (Harms et al., 2005), four reported overall mean scores (range = 4.52 – 5.45) as well as individual subscale scores (range across studies; Space and Furnishings = 4.68 - 5.02, Personal Care Routines = 2.88 - 4.58, Language and Literacy = 4.66 - 5.81, Learning Activities = 4.18 – 5.29, Interactions = 5.29 – 6.18, Program Structure = 49.94 – 5.99, Parents and Staff = 5.44 – 6.13). One study only reported the overall mean score (M = 5.16). One study reported individual subscale means only and provided them for four subscales (Language and Literacy = 5.50, Learning Activities = 4.19, Interactions = 5.38, Program Structure = 5.55). The last study using ECERS-R (Harms et al., 2005) reported overall mean scores obtained from ECERS-R based on the type of child care programs ($M_{\text{Head Start}}$ = 4.95, $M_{\text{Child Care}}$ = 4.58, $M_{\text{Public PreK}}$ = 5.14, $M_{\text{Developmental Day}}$ – 5.31, and M_{Overall} = 4.92). One study using ECERS-3 (Harms et al., 2015) reported findings as individual mean subscale scores. This included Space and Furnishings = 2.97, Personal Care Routines = 2.56, Language and Literacy = 3.3, Learning Activities = 2.14, Interactions = 4.46, and Program Structure = 4.04).

Table 3. Early childhood environment rating scale mean scale and subscale/ındicator scores (SD)

ECERS								
Reference/Country/n	M	PC	FR	LA	FG	CA	SD	AN
Buysse et al. (1999)/United States/ n = 180	N/A	INC = 4.72 (.87), NI = 4.38 (.80)	INC = 4.41 (.78), NI = 4.13 (.79)	INC = 4.38 (1.02) NI = 3.99 (.93)	INC = 4.64 (.62) NI = 4.45 (.49)	INC = 4.45 (.82) NI = 4.24 (.62)	INC = 3.99 (1.01) NI = 3.61 (.78)	INC = 4.49 (1.06) NI = 4.08 (.94)
Campbell et al. (2005)/United States/ n = 228	N/A	3.25 (range = 1.8-7.0)	3.28 (range 1.0-7.0)	2.9 (range 1.0-7.0)	3.44 (range 1.4-5.0)	2.98 (range 1.0-6.14)	2.83 (range 1.0-6.67)	3.50 (range 1.5-6.5)
File and Kontos (1993)/United States/n = 36	4.51 (.70)							
Kontos et al. (1998)/United States; n = N/A	4.8							
La Paro et al. (1998) United States; n = N/A	INC = 4.77 (.83) NI = 4.68 (.60)							
ECERS-R								
	M	SF	PC	LA	LE	IN	PS	PA
Clawson and Luz. (2008) United States; n = 11	N/A	N/A	N/A	5.50 (1.30)	4.19 (0.88)	5.38 (1.51)	5.55 (1.34)	N/A
Grisham-Brown et al. (2010), United States; n = 59	INC = 4.74 (.9) NI = 3.93 (.95)	INC = 4.79 (1.03) NI = 4.05 (.99)	INC = 2.88 (1.29) NI = 2.62 (1.09)	INC = 5.00 (1.13) NI = 4.40 (1.3)	INC = 4.70 (1.67) NI = 3.33 (1.19)	INC = 5.64 (1.15) NI = 5 (1.4)	INC = 5.68 (1.3) NI = 3.73 (1.17)	INC = 5.44 (.96) NI = 4.96 (1.2)
Hestenes et al. (2008) United States; n = 1357	Study 1; INC: 5.19, NI: 4.90, Study 2; INC: 4.68, NI: 4.19	Study 1; INC: 5.02, NI: 4.91 Study 2: INC: 4.88, NI: 4.38	Study 1; INC: 3.97, NI: 3.8, Study 2; INC: 4.58, NI: 3.71	Study 1; INC; 5.62, NI; 5.30, Study 2: INC: 4.66, NI: 4.11	Study 1; INC: 5.29, NI: 5.02, Study 2: INC: 4.18, NI: 4.06	Study 1; INC: 5.86, NI: 5.45, Study 2: INC: 5.29, NI: 4.38	Study 1; INC: 5.88, NI: 5.56, Study 2: INC: 4.94, NI: 4.79	Study 1; N/A, Study 2; N/A
Jeon et al. (2010) United States; n = 106	INC = 4.52 (.78) NI = 3.71 (1.22)	N/A	N/A	INC = 5.81 (.82) NI = 4.49 (1.51)	INC = 4.41 (.83) NI = 3.83 (1.10)	INC = 5.92 (1.22) NI = 5.18 (1.49)	INC = 5.66 (1.66) NI = 4.83 (1.88)	N/A
Keesbury (2015) United States; n = N/A	5.45	4.68	4.45	5.69	5.16	6.18	5.99	6.13
ECERS-3								
Næsby (2020) Denmark; n = N/A	N/A	2.97	2.56	3.3	2.14	4.46	4.04	N/A
Soukakou et al. (2014) United States; n = 148	4.92							
Stanton-Chapman et al. (2016) United States; n = 10	5.16							

Note. INC:Inclusive; NI: Noninclusive; M: Mean Scores; PC: Personal care; FR: Furnishings; LA: Language reasoning; FG: Fine and gross motor; CA: Creative activities; SD: Social development; AN: Adult needs; SF:Space and furnishings; LE: Learning activities; IN: Interactions; PS: Program structure; PA: Parents and staff; ECERS: Early Childhood Environment Rating Scale

Table 4. Inclusive classroom profile mean scale and ıtem scores (SD)

Reference/ Country/n	M	Key practice/Item											
		AS	AI	AG	CR	ME	RE	SC	AD	TR	FE	FO	MO
Bakkaloglu et al. (2019)	N/A	3.38 (.67)	1.80 (.61)	2.02 (.76)	.08	2.19 (.77)	2.46 (.85)	1.72	2.02	2.02	1.87	1.00	1.21
Türkiye; n = 47					(.35)			(.53)	(1.52)	(.14)	(.49)	(.00)	(.41)
Chhabra et al. (2018)	N/A	4.38 (1.0)	4.48)	3.71 (1.0)	3.81 (1.3)	4.19 (.91)	4.46 (.67)	4.62	5.04 (.93)	4.46 (.80)	4.33	2.91 (.70)	4.29 (.67)
Botswana; n = N/A			(1.34)					(.80)			(1.09)		
Classen and Westbrook (2022)	N/A	4.93	3.14	3.36	N/A	3.19	3.39	2.87	3.72	2.23	3.08	1.60	2.17 (1.15)
United States; n = 83		(1.67)	(1.67)	(1.32)		(1.56)	(1.48)	(.947)	(1.58)	(1.33)	(1.24)	(1.33)	
Fyssa and Vlachou (2015)	N/A	3.69	2.73	2.96	1.33	2.58	3.37	2.88	2.73	2.73	3.17	N/A	1.17 (.55)
Greece; n = 96		(1.50)	(1.50)	(1.73)	(0.51)	(1.58)	(1.14)	(1.42)	(1.54)	(1.54)	(1.25)		
Muccio et al. (2014)	N/A	4.89 (.6)	4	4.38 (.92)	4.44 (.73)	4.67 (.87)	4.78	4.44	5	5.22 (.97)	4.78 (.97)	N/A	N/A
United States; n = 71			(.87)				(1.09)	(1.13)	(1.5)				
Vlachou and Fyssa (2016)	NA	3.69	2.73 (1.4)	2.96	N/A	.58 (1.58)	3.37	2.88	2.73	2.92	3.17	N/A	N/A
Greece; n = 96		(1.5)		(1.73)			(1.14)	(1.42)	(1.54)	(1.45)	(1.25)		
Soukakou et al. (2014)	Mean: Overall (4.39), Head Start (4.64), Child Care (3.67), Public PreK (4.76), Developmental Day (5.12)												
United States; n = 148													

Note. M: Mean Scores; AS: Adapt space; AI: Adult involved-Interaction; AG: Adult guide play; CR: Conflict resolution; ME: Membership;, RE: Relation between adults/ children; SC: Support communication; AD: Adaptation of group activities; TR: Transition between activities; FE: Feedback; FP: Family-professional partnership; MO: Monitor child learning.

Table 5. Classroom assessment scoring system mean scale and domain/dimension scores (SD)

Reference/ Country/n	M	Emotional Support				Classroom Organization			Instructional Support		
		POS	NEG	TSE	RFS	BEH	PRO	ILF	COD	QOF	LMO
Aguiar et al. (2019)	N/A	medium quality				medium quality			low quality		
Portugal; n = 44											
Cadima et al. (2018)	N/A	4.84	1.52	4.36 (1.12)	4.24 (1.12)	4.69 (1.08)	5.19 (0.84)	4.13 (0.99)	2.02	2.28	2.51 (1.01)
Spain; n = N/A		(1.01)	(0.60)						(0.87)	(0.91)	
Coelho et al. (2019)	N/A	4.83				3.97			2.48		
Spain; n = 39		(.65)				(.65)			(.70)		
Pelatti et al. (2016)	N/A	Inclusive: 5.20 (.64)				Inclusive: 4.62 (.64)			Inclusive: 2.19 (.54)		
United States; n = N/A		Non-Inclusive: 4.91 (.88)				Non-Inclusive: 4.38 (.86)			Non-Inclusive: 3.86 (.97)		
Stanton-Chapman et al. (2016)	5.16	N/A				4.67			2.95		
Unites States; n = 10											
Yeomans-Maldonado et al. (2019)	5.23	5.23 (1)	1.35	4.68 (.99)	4.11	N/A	N/A	N/A	2.18 (.76)	2.23	2.11 (.80)
United States; n = 83	(1)		(.46)		(.99)					(.81)	

Note. M: Mean; POS: Positive Climate; NEG: Negative Climate; TSE: Teacher Sensitivity; RFS: Regard for Student Perspective; BEH: Behavior Management; PRO: Productivity; ILF: Instructional Learning Formats; COD: Concept Development; QOF: Quality of Feedback; LMO: Language Modeling.

ICP

As illustrated in Table 4, seven studies used the **ICP** as the measurement tool to assess quality of inclusive preschool classrooms. Of the seven studies, six reported individual mean subscale scores. The range of mean subscale scores reported across studies were Adaptation of Space and Materials = 3.38 – 4.93, Adult Involvement in Peer Interactions = 1.8 – 4.48, Adult's Guidance of Children's Play = 2.02 – 4.38, Conflict Resolution = .08 – 4.44, Membership = 2.19 – 4.67, Relationships Between Adults and Children = 2.46 – 4.78, Support for Communication = 1.72 – 4.62, Adaptation of Group Activities = 2.02 – 5.04, Transitions Between Activities = 2.02 – 5.22, Feedback = 1.87 – 4.78, Family Professional Partnership = 1.0 – 2.91, Monitoring Children's Learning = 1.17 – 4.29. Of the seven studies using the ICP, one study reported overall mean scores obtained from ICP based on the type of child care programs ($M_{\text{Head Start}}$ = 4.64, $M_{\text{Child Care}}$ = 3.67, $M_{\text{Public PreK}}$ = 4.76, $M_{\text{Developmental Day}}$ = 5.12, and M_{Overall} = 4.39**).**

CLASS

As presented in Table 5, six studies used CLASS as the measurement tool to evaluate preschool classroom quality. Across the six studies, three studies reported mean domain scores (range of mean scores across studies; Emotional Support = 4.83-4.91, Classroom Organization = 3.97- 4.67, and Instructional Support = 2.48-3.86). Two studies reported mean dimension scores for 7 of the 10 dimensions (range of mean scores across studies; Positive Climate = 4.8 – 5.23, Negative Climate = 1.35 - 1.5, Teacher Sensitivity = 4.36 – 4.68, Regard for Student Perspectives = 4.11 - 4.24, Concept Development = 2.02 – 2.18, Quality of Feedback = 2.23 – 2.28, and Language Modeling = 2.11 – 2.51). One of these studies provided mean dimension scores for the three remaining dimensions while the other did not (Behavior Management = 4.69, Productivity = 5.19, Instructional Learning Formats = 4.13). One study did not report accrual mean scores obtained from CLASS but categorized scores as range (Classroom Organization – medium range, Emotional Support – medium range, Instructional Support – low range).

QuIEM

One study used the QuIEM and reported mean scores for each area. The mean area scores were 65.94 for Program Goals and Purpose, 86.99 for Staff Supports and Perceptions, 16.86 for Accessibility/Physical Movement, 28.66 for Individualization, 90.72 for Children's Participation and Engagement, 39.06 for Adult to Child Contacts, and 53.16 for Child to Child Contacts.

Discussion

The purpose of this systematic review was to identify studies focused on examining quality of inclusive preschool classrooms, determine characteristic features of these studies and summarize information about the overall quality of inclusive preschool classrooms. Twenty-five articles met the inclusion criteria and were analyzed using a 27-item coding system developed by the researcher. In the following sections, I discuss the findings of the present study with respect to each research question, describe limitations of the present review, and offer implications for future research.

Descriptive Characteristics

Across the 25 studies, there was not a consistent method of reporting classroom demographics including characteristics of early care providers or preschool teachers. The majority of the studies reported the type of preschool classroom. However, some of the studies did not specify the type of preschool classroom and only referred to the data as occurring in preschool classrooms. Limited data in relation to early care providers' or preschool teachers' demographics were reported across the studies including age, years of experience or training on inclusion. Racial demographics were only provided in studies conducted in the United States. The majority of the teachers in the studies identified as white or Black females which is consistent with the demographics of early child care providers in the United States (Whitebook et al., 2018). The limited data on the classroom characteristics and demographics of early care providers or preschool teachers, is a significant limitation in understanding the characteristics of teachers who are

successful in promoting high-quality inclusive classrooms. Moreover, it limits the generalizability of the findings to larger populations. The EASNIE (2014) highlighted the importance of addressing the diverse needs of teachers and ensuring equitable representation in early childhood education settings to improve inclusive practices. Future studies should provide detailed information on classroom characteristics, such as the type of the classroom (inclusive versus non-inclusive), the size of the classroom and consider including more detailed information on the demographics and qualifications of teachers, which could provide valuable insights for developing effective professional development programs for teachers in relation to improving classroom quality.

Measurement of Classroom Quality

Earlier studies investigating preschool classroom quality used CLASS, ECERS, and ECERS-R, measures designed to evaluate general preschool classroom quality. The provision of children with disabilities in these measures is limited as they were not specifically designed to assess the quality of inclusive classrooms. While these measures do include some items related to the provision of services for children with disabilities, they may not capture the full range of practices needed to create high quality inclusive environments. For example, the ECERS-R includes items related to the provision of specialized equipment and materials for children with disabilities but does not assess the extent to which children with disabilities are actively engaged in classroom activities and routines or involved in peer interactions. As a result of these limitations, researchers have developed measures that are specifically designed to evaluate the quality of inclusive preschool classrooms. One such measure is the Inclusive Classroom Profile which has been used in seven more recent studies included in this review to assess the quality of inclusive early childhood settings.

Fifteen studies reported some information about individuals who conducted classroom quality measures. This includes roles/credentials and number of observers. Nineteen studies specified that observers were trained prior to data collection for the study but training procedures or trainers' credentials were rarely described. These inconsistent reporting practices make it difficult to evaluate whether observers were trained to use these observational measures using valid training procedures by trainers who were qualified to provide training. For example, if ECERS is being used as a high stakes assessment, the training must come from an authorized trainer, which is currently the authors. Environment Rating Scale Institute (ERSI) does acknowledge that agencies may be using unauthorized trainers which can result in unrealistic scores for programs (Environment Rating Scale Institute [ERSI], n. d.), which may also be true for research studies.

Interobserver agreement (IOA) reliability data was only reported in 14 studies. The studies had a broad range of acceptable IOA percentages ranging between 86% to 99.5%. Eleven studies did not report that they met any IOA standards in their studies. The lack of reporting of IOA in observational research is problematic as it raises questions about the reliability and validity of the data collected. IOA is a measure of the extent to which multiple observers agree on the occurrence or non-occurrence of a behavior or event and is crucial for ensuring that the data collected is accurate and consistent (Ledford et al., 2018). The fact that only 14 studies reported IOA in this review suggests that many studies may not have conducted adequate reliability checks, which can undermine the credibility and usefulness of their findings. Future studies should collect and report IOA data more systematically to improve the rigor and credibility of observations. Moreover, future studies should report how observers were trained, whether they were certified, or reached to a reliability standard before collecting data for the study.

Classroom Quality

Six studies compared the quality of preschool classrooms with and without children with disabilities in the United States. Of six studies, three used ECERS-R, two used ECERS, and one used CLASS. The findings of the studies using the ECERS or ECERS-R tools indicate that inclusive classrooms had higher overall and mean subscale scores than classrooms that only served typically developing children. However, the mean subscale scores for both classroom types generally fell within the good quality range (between 4 and 6). This suggests that both inclusive classrooms and classrooms that only served typically developing

children generally provided good quality care as measured by ECERS or ECERS-R. One study that utilized the CLASS tool found that inclusive classrooms had higher mean scores for the Emotional Support and Classroom Organization domains, while classrooms that only served typically developing children had a higher score for the Instructional Support domain. The mean domain scores for Emotional Support and Classroom Organization were in the mid-range quality across classroom types. However, the mean quality score for Instructional Support was in the mid-range for classrooms that only served typically developing children and low range for inclusive classrooms. These findings suggest that while both types of classrooms generally provided good quality care, there may be areas for improvement in terms of instructional support, particularly in inclusive classrooms. Further research is needed to explore the factors that contribute to these differences and to identify strategies for improving the quality of early childhood education for all children.

Of the thirteen studies that utilized one of the ECERS measures, twelve were conducted in the United States, while one was conducted in Denmark. The studies conducted in the United States reported overall subscale scores that were in the good quality range (between 4 and 6), while the study conducted in Denmark reported overall subscale scores that were in the minimal quality range (between 2 and 4). Across the six studies that utilized the CLASS, three were conducted in the US, two were conducted in Spain, and one was conducted in Portugal. The reported mean domain scores for Emotional Support and Classroom Organization were in the medium quality range across the countries, while the mean score for Instructional Support domain was in the low-quality range.

The examination of the seven studies utilizing the ICP reveals significant geographical disparities in preschool classroom quality, which prompts a deeper inquiry into the factors influencing these outcomes. Among the studies, three were conducted in the United States, two in Greece, one in Türkiye, and one in Botswana. Findings from the United States show that average quality scores range from Poor to Good, while in Greece and Türkiye, they predominantly fall within the Poor to Minimal range. In Botswana, mean quality scores ranged from Minimal to Good. Although comparing the progress of different countries in promoting inclusion is challenging due to varying interpretations of inclusion in national policies and among researchers, this variability highlights the influence of different socio-cultural contexts and educational policies. Pianta et al. (2009) noted that systemic factors, such as teacher training and curriculum standards, play a crucial role in determining classroom quality. The impact of poor classroom quality in early childhood settings is significant, potentially affecting children's developmental trajectories and long-term educational outcomes (Burchinal, 2016). Therefore, further research is needed to explore the unique educational strategies employed in various countries.

These findings suggest that there are differences in preschool classroom quality across different countries, as measured by the ECERS, CLASS, and the ICP. While preschool classrooms in the United States generally scored well on the ECERS measures, there were differences in quality between the United States and Denmark on this measure. On the CLASS measure, preschool classrooms across countries scored similarly across all domains. For the ICP measure, the United States had higher scores overall than Botswana, Greece, and Türkiye, but there were variations in quality within the United States and within the other countries. These findings suggest that efforts are needed to improve preschool classroom quality globally and that further research is needed to understand the factors that contribute to differences in quality across countries. The EASNIE (2014) also stressed that teacher collaboration and professional development are key in raising these quality levels. Such approaches can help improve classroom environments, making them more inclusive and responsive to diverse needs.

Limitations

First, this study only included articles published in English, which may have limited the range of studies reviewed. There may be studies conducted in the international context that could provide additional evidence for the quality of inclusive preschool classrooms. Second, some relevant literature may have been excluded because the researchers did not clearly report whether the classroom environment was inclusive or not. This could have resulted in the exclusion of studies that met the other inclusion criteria

but did not explicitly state that the classroom included both children with and without disabilities. Finally, the study did not provide a detailed analysis of the quality of the articles included in the review.

Implications for Future Researc and Practice

The current systematic review provides valuable insights into the characteristics of studies focused on examining quality of inclusive preschool classrooms. The lack of consistent reporting of classroom and teacher demographics in studies focused on inclusive preschool classrooms is a significant limitation in understanding the characteristics of successful inclusive classrooms and limits the generalizability of the findings. Therefore, researchers should prioritize collecting and reporting detailed information on classroom characteristics and teacher demographics, including age, years of experience, and training on inclusion. This information could provide valuable insights for developing effective professional development programs for teachers in relation to improving classroom quality. Future studies should also consider including more diverse samples of teachers and classrooms to increase the generalizability of the findings. Additionally, the development of a standardized method for reporting classroom and teacher demographics in studies focused on inclusive preschool classrooms could improve the consistency and accuracy of future research in this area. Inconsistent reporting practices regarding the roles and training of individuals who conduct classroom quality measures raise concerns about the reliability and validity of the data collected. Future studies should provide more detailed information about the training and credentials of observers to ensure that data is collected using valid and reliable procedures. The limited reporting of the interobserver agreement reliability data across studies is another limitation that must be addressed in future research. Researchers should collect and report IOA data systematically to improve the rigor and credibility of their findings. The findings of the current review highlight differences in preschool classroom quality across different countries. It would be valuable to investigate country-specific factors that may be affecting preschool quality, such as funding, teacher training, and cultural differences, to develop tailored interventions to improve quality. Finally, future research should focus on developing a quality appraisal tool specifically designed for observational studies. This would fill a critical gap in the field and provide researchers with a standardized method to assess and compare the quality of observational research more effectively.

The results also suggest that inclusive classrooms may need improvement in the area of instructional support. Educators and policymakers should focus on identifying strategies to improve instructional support in inclusive classrooms to ensure that all children receive high-quality early childhood education. To ensure successful implementation of inclusive practices, professional development programs should be designed to equip educators with the necessary skills to support diverse learners. Training should focus on evidence-based strategies for fostering social interactions, adapting curricula, and implementing individualized support for children with disabilities. By investing in ongoing training and support, educators will be better prepared to create high quality inclusive environments that meet the needs of all children. The EASNIE (2014) further emphasizes that continuous professional development should incorporate collaboration between educators and families to create personalized support systems for each child.

The use of established quality assessment tools, such as the Inclusive Classroom Profile, can provide valuable insights into the effectiveness of inclusive practices. Regular evaluations of classroom quality can help educators identify areas for improvement and track progress over time. Schools and programs should adopt a culture of continuous assessment to enhance the overall quality of inclusive education. The EASNIE (2014) supports the idea of embedding ongoing assessments into daily practices, ensuring that inclusivity and quality are monitored at every stage.

Collaboration among educators, families, and support services is crucial for creating effective inclusive environments. Schools should promote open communication with families and involve them in the decision-making process regarding their child's education. Building strong partnerships with families can enhance support systems for children with disabilities, ultimately leading to better educational outcomes. Policymakers should advocate for the allocation of resources to support high-quality inclusive

programs. This includes funding for professional development, classroom materials, and resources that facilitate inclusive practices. By creating policies that prioritize inclusivity and classroom quality, stakeholders can ensure that all children have access to high-quality early childhood education.

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Research Article

An international scoping review focused on gifted and talented children: Early identification and inclusive education

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Abstract: Gifted and talented children should be identified at an early stage and provided with opportunities to thrive, flourish, and develop in inclusive education. Inclusive education refers to a sense of belonging, and development to one's fullest, including talent development. This international scoping review aims to investigate contextual and environmental factors contributing to well-functioning inclusive education, with a particular focus on early identification of gifted and talented children. The Bioecological model for human development and the Differentiating Model of Giftedness and Talent constituted the framework. Twenty-three (N=23) research articles were included and two thematical analyses were conducted. Regarding early identification, five influential factors (i.e., themes) were created: Knowledge about giftedness and talent; Opportunities for all children to demonstrate their abilities; Identification strategies; Collaborations; and Teacher education and professional development. Regarding well-functioning inclusive education, five factors (i.e., themes) were created, which, in addition to early identification, will also play a role; these were: Policies recognising inclusion and gifted and talented children; Appreciation of diversity; Additional educational provisions; Peer interactions and learning; and Home-school partnership. A factor model for early identification and well-functioning inclusive education targeting giftedness and talent is presented, and suggestions for practitioners and further research are provided.

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Introduction

This international scoping review is about inclusive education, early identification, and giftedness and talent. It aims to investigate contextual and environmental factors that contribute to well-functioning inclusive education, with a particular focus on early identification of gifted and talented children.

The article begins with an introductory section covering inclusive education, early identification, and gifted and talented children. Subsequently, the aim and research questions are clarified. Following this, there is an outline of the review method, and the results are presented. Finally, the article concludes with a discussion.

Inclusive Education and Early Identification

Inclusive education is an appreciation of diversity, where all children obtain a sense of belonging and are able to develop to their fullest (Lundqvist, 2018; Sandall et al., 2019; Tirri & Laine, 2017). Therefore, inclusive education is about children who thrive and flourish, and have opportunities to develop further, together with peers. Thriving covers a child's sense of belonging and psychological well-being, whereas flourishing refers to developing to one's fullest and having the opportunity to contribute to the greater good of society (Sayler, 2009; Sternberg, 2023). However, it is also about ensuring that all staff members

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and families who work and are enrolled in education feel that they are supported and have a sense of belonging (Sandall et al., 2019).

Inclusive education takes various forms (Guralnick et al., 2008; Lundqvist et al., 2015). One example is full inclusion, in which all the children participate in the classroom activities taking place. Another example is partial inclusion, in which inclusive education is combined with some pulled-out educational provisions, when needed.

Previous studies concentrating on inclusive education and gifted and talented children have shown that those children attend inclusive education but are not always provided with opportunities to experience a sense of belonging or to develop to their fullest (Harju-Luukkainen et al., 2022; Margrain & Lundqvist, 2019; Pardeck & Murphy, 2018), for example in preschool and school in Sweden (Margrain & van Bommel, 2022; Mattsson & Bengmark, 2011; Persson, 2010). Consequently, there is room for improvement, and it is important to provide knowledge about factors that contribute to well-functioning inclusive education.

Today, inclusive education is an international agreement and goal, and development to one's fullest is the right of every child. For example, the Salamanca declaration (United Nations Educational, Scientific and Cultural Organisation [UNESCO], 1994) promotes inclusion, the worldwide Sustainable Development Goal Number 4 aims to ensure "inclusive and equitable quality education and promote lifelong learning opportunities for all" (United Nations [UN], 2015, Goal Number 4) by 2030, and the UN Convention on the Rights of the Child states that "the education of the child shall be directed to |…| the development of the child's personality, talents and mental and physical abilities to their fullest potential" (1989, Article 29).

It goes without saying that a teacher who knows the children well in a class can plan and provide an inclusive education that matches the children's abilities. Consequently, identification of children's abilities, such as giftedness and talents, is a factor that contributes to well-functioning inclusive education.

Even at an early age, it is possible to identify children's gifts and (emerging) talents (Brighton & Jarvis, 2017; Coates et al., 2009; Čotar Konrad, & Kukanja Gabrijelčič, 2015). In fact, childhood is considered a crucial period for this (Huang, 2008). Yet, previous studies on early identification, and gifted and talented children have shown that this is not always achieved (Brighton & Jarvis, 2017; Grant & Morrissey, 2021; Luria et al., 2016; Peters et al., 2020). Thus, there is room for improvement in this regard, and it is important to provide knowledge about factors that contribute to early identification of giftedness and talent.

Unidentified and unnurtured giftedness and talents can negatively affect a child, leading to problems such as misinterpretations and underachievement (Brighton & Jarvis, 2017; Delisle & Schultz, 2021; Sayler, 2009; Veas et al., 2016). Some examples are boredom, depression, a low level of self-esteem, and an overall unpleasant inclusive educational experience. Such manifests can create a situation where a child is misunderstood as arrogant, disruptive, and unmannerly, and not, correctly, as a gifted and talented child. Underachievement refers to a considerable gap between expected and actual performance consistent over time, unrelated to a disability (Reis & McCoach, 2000; Ridgley et al., 2020; White et al., 2018). Regarding a child with both gifts and talents, and a disability (i.e., twice-exceptionality), his or her gifts and talents and disability may mask one another (Baldwin et al., 2015). Therefore, only one of these may be identified and addressed during planning and provision of inclusive education. This can also negatively affect a child.

Gallagher and Gallagher (1994) and Sternberg (2022, 2023) have stressed that identifying and nurturing giftedness (and talent) also have great significance for society at large and in the progress towards a better and more sustainable world; thus, these are not only beneficial for individual children's sense of belonging, development, and talent development. Gallagher and Gallagher (1994) explained this as follows:

Failure to help gifted children reach their full potential is a societal tragedy, the extent of which is difficult to measure but which is surely great. |…| These gifted students are a substantial part of the difference between what we are and what we could be as a society. (p. 4)

Theories

In this review, alignment is established with the Bioecological model for human development (Bronfenbrenner & Morris, 1998, 2006). The model encompasses four interplaying contextual systems that, together with two other systems (i.e., the biosystem and chronosystem), influence children's intellectual, social, emotional, and moral development. These four contextual systems are: the microsystem (i.e., the child's immediate settings), the mesosystem (i.e., linkages between these immediate settings), the exosystem (i.e., distal events, seen from a child's perspective, that influence immediate settings and their linkages), and the macrosystem (i.e., characteristics of a culture, such as policy content). These influences from contextual factors on child development are often illustrated by trees' growth rings. One practical scenario is that an education act in a country (macrosystem), allocations of resources to a preschool or school (exosystem), teacher-parent communications (mesosystem), and teacher-child interactions (microsystem) interplay, and jointly influence a child's development.

Alignment is also established with the Differentiating Model of Giftedness and Talent (DMGT, Gagné, 2021), explicitly focused on talent development. Gifts (and giftedness) refer to aptitudes in one or several domains (i.e., intellectual, creative, social, perceptual, muscular, and motor control), whereas talents refer to competencies in one or several fields (i.e., academic, technical, science and technology, arts, people service, management and sales, business systems, sports and athletics, and games). Figure 1 presents an overview of the DMGT. The model presents gifts (G) to the left and talents (T) to the right. In the middle is the developmental process (D) – from giftedness to talent – influenced by both intrapersonal (I) catalysts (i.e., physical, psychological, motivation and volition) and environmental (E) catalysts (i.e., social, interpersonal, and educational). Chance (C) represents opportunities to develop talent and relates to both genetic and family background. It is placed behind G, E, I and D components since it influences these.

DMGT links giftedness and talent to the top 10% of the population. This percentage can be understood as being one or a few children in every preschool group or school class.

These two models are compatible, and, in this review, they are considered to complement one another. Constituting the conceptual and theoretical framework for the review, they provide useful and valuable concepts and explanations.

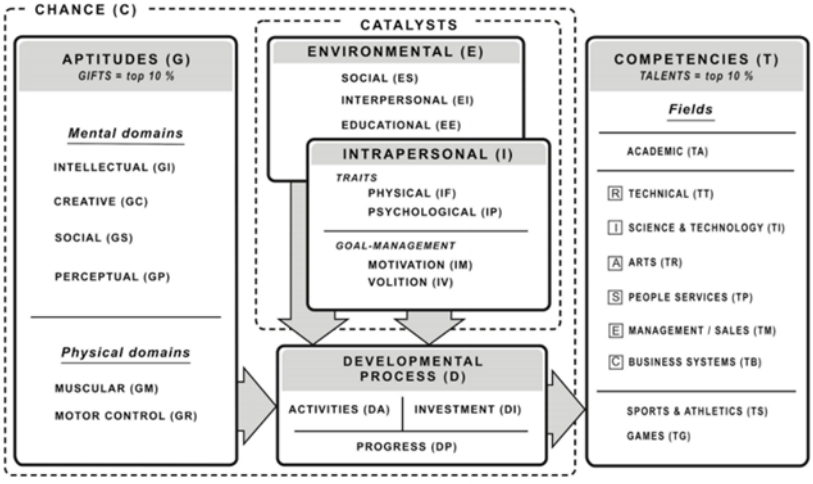

Figure 1. The Differentiating Model of Giftedness and Talent (DMGT) summary
Note. Obtained from "Dr. Françoys Gagné, 2012-2023, 'DMGT EN', para. DMGT Popular Slides". Reprinted with permission.

Aim and Research Questions

This scoping review aims to investigate contextual and environmental factors contributing to well-functioning inclusive education for gifted and talented children. Particular attention is given to early identification of giftedness and talent. The following questions are posed: (RQ1) What factors contribute to

the early identification of gifted and talented children? (RQ2) In addition to early identification, what factors contribute to well-functioning inclusive education in which gifted and talented children experience a sense of belonging and develop to their fullest?

Method

In this international scoping review, guidelines from Arksey and O'Malley (2005), Peters et al. (2015), Levac et al. (2010) and Peters, Marnie et al. (2020) were followed. Using these guidelines, it was possible to identify research results, including implications and conclusions. An online software platform (i.e., Covidence; www.covidence.org) was used in the review as well as the Excel database program. Two reflexive thematic analyses, as presented by Braun and Clarke (2006, 2022), were conducted; one for each research question. Using such analyses, it was possible to identify patterns (i.e., themes) within research results of the chosen topics of interest, and to answer the research questions.

Since the review paid particular attention to early identification, articles dealing with this were sought. Furthermore, since the review also focused on other factors promoting well-functioning inclusive education (i.e., a sense of belonging, and development), such factors were also sought in these articles.

Inclusion Criteria

To begin we set the inclusion criteria. An article had to fulfil several requirements to be included. The criteria related to time, target population, topics, contained articles, the geographical location of researchers, the language used, and peer-review processes (Table 1).

Table 1. Inclusion criteria

Criteria	Description
Time period	1 January 2010 – 30 April 2023
Target population	Children and teachers in educational settings, such as inclusive preschool and early school years, teacher educators, evaluators, and researchers
Topic	Social science, education
Contained articles	Empirical studies or reviews
Geographical location of researchers	International
Language	English
Article	Peer-reviewed

Search Strategy and Selection of Articles

To identify articles for the review, the first author searched the electronic database SCOPUS, using a broad set of terms. The query for SCOPUS was:

> (TITLE-ABS-KEY (gift* OR talent* OR "high* ab*" OR "more ab*") AND TITLE-ABS-KEY (child* OR student* OR pupil*) AND TITLE-ABS-KEY (k OR k-12 OR k-3 OR "childhood education*" OR education* OR preschool* OR kindergarten OR daycare* OR "infant school*" OR school*) AND TITLE-ABS-KEY (identif* OR notic* OR detec* OR recogn* OR discov*) AND TITLE-ABS-KEY (environment* OR "environment* factor*" OR context OR setting* OR influencing OR "influenc* factor*") OR TITLE-ABS-KEY (scale* OR assess* OR observ* OR test OR trace OR character*)) AND PUBYEAR > 2009 AND PUBYEAR < 2024 AND (LIMIT-TO (SUBJAREA , "SOCI")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (SRCTYPE , "j"))

The result of the SCOPUS search on 26 April 2023: N=994. The articles (N=994) were uploaded into Covidence. Thereafter, the first author, through manual scanning and reading of titles and abstract, excluded a total of 785 articles, and included 207 in the initial selection. Articles were disregarded if they did not meet the inclusion criteria in Table 1 and were kept when they did. To further refine the selection of articles, the first author conducted a second round of reading, involving a full-text review of these 207 articles. Once again, the inclusion criteria were controlled. At the same time, the first author assessed the quality of these articles (i.e., scientific article disposition; the use of empirical data). This phase of review resulted in the additional exclusion of 189; 18 articles were left in the review. Additionally, the first author conducted a hand-search via the reference lists in these remaining articles, as well as a hand-search in these articles' journals. On 23 May 2023, this additional search yielded three more articles. The first author then

performed a search using the electronic database ProQuest (ERIC) to identify relevant studies on the topic, although this did not yield any further articles for inclusion in the review. However, two articles previously known to the authors were added to the review. In summary, 23 articles were included in the review process. This total is calculated as the sum of the initially included 18 articles, the three articles found in the hand-search, and the two articles previously known about. Figure 2 presents a flowchart of the search and selection.

With two exceptions, author two confirmed the inclusion of theses 23 articles. Authors one and two discussed these two minor discrepancies and jointly decided to retain the two articles in the review.

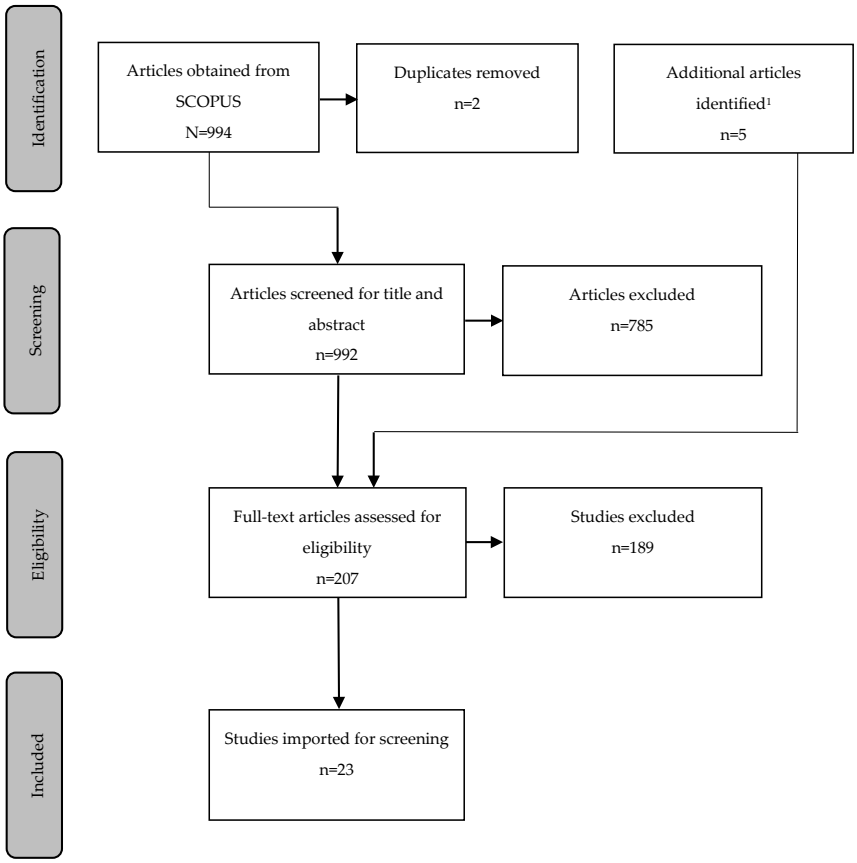

Figure 2. Flowchart of article selections process

[1] No additional articles were obtained from ProQuest (ERIC) but three articles using hand-searching were found and two articles previous known to the authors were added.

Data Chartering for an Overview of the Included Articles

To gain an overview of the included articles, the first author entered data for each of the 23 included articles using the Excel database program. For each article, this author charted the following information: author(s), year of publication, study location, study population (Table 2), aim of the study, methodology, concept, key findings, and important results from the included articles.

Table 2. Articles reviewed

Article number	Author(s)	Year of publication	Geographical location	Educational settings and participants
1	Adedoyin and Chisiyanwa	2018	Botswana	Pre-school teachers
2	Akman et al.	2017	Turkey	Preservice preschool teachers
3	Al-Mahdi et al.	2021	Bahraini	School teachers
4	Bačlija Sušić and Brebrić	2022	Croatia	Preschool/kindergarten children
5	Bildiren	2018	Turkey	Parents to gifted children in preschool

6	Bildren et al.	2023	Turkey	Gifted children and their families
7	Carman et al.	2020	USA	Kindergarten students
8	Dağlıoğlu and Suveren	2013	Turkey	Kindergartens of elementary school teachers and parents
9	Dereli and Deli	2022	Turkey	Pre-school teachers
10	Havigerová et al.	2013	Czech Republic	Preschool nursery teachers and parents
11	Idsøe et al.	2022	Norway	Early Childhood Education and Care (Kindergarten) teachers and parents
12	Jawabreh et al.	2022	Palestine	Pre-school teachers
13	Kaplan Sayı and Yurtseven	2022	Turkey	Primary school students
14	Kazem et al.	2014	Oman	School students
15	Lee et al.	2022	South Korea	Elementary school teachers
16	Mack et al.	2021	Germany	Elementary school teachers
17	Matthews and Rhodes	2020	USA	Kindergarten-2nd grade policies
18	Mohamed and Elhoweris	2022	United Arab Emirates	Preschool teachers
19	Nissen	2019	Denmark	School children, adolescents, parents, and teachers
20	Nordström	2022	Sweden	Preschool teachers and principals
21	Winsler et al.	2013	USA	Childcare or pre-K
22	Yetti et al.	2021	Indonesia	Kindergarten teachers
23	Zhang	2023	China and Scotland	Primary school teachers

In-depth Review Using Two Reflexive Thematic Analyses

The first author conducted reflexive thematic analyses of research results, implications, and conclusions obtained from the included articles. These were not strictly linear analyses, but rather progressive but recursive.

Analysis one was related to RQ1. The first author initiated the analysis by familiarising herself with research data linked to factors contributing to early identification, involving reading and rereading of the included articles, and noting sections or sentences concentrated on such factors (Phase 1). The author semantically coded these research data through a critical reading (Phase 2). The codes were organised into potential themes (Phase 3), the first author reviewed the themes, and ensured all data coded were related to a theme (Phase 4). The author generated a definition for each theme and named the themes (Phase 5). Finally, the first author finessed and finished the writing process and wrote the result for RQ1 (Phase 6). Analysis two, related to RQ2, with one exception, was the same as the first analysis: it was linked to factors, in addition to early identification, contributing to well-functioning inclusive education. One example of the non-linear analyses was going back to previous phases, when needed.

With few exceptions, author two confirmed the themes. Authors one and two discussed these discrepancies and jointly decided to make refinements. These were to merge four themes into two themes, to omit one theme, and to add some more articles to some themes.

The results include numbers related to the articles (Table 2), as well as examples and some quotations from the articles to increase trustworthiness.

Results

The results begin with RQ1.

Contextual and Environmental Factors That Contribute to Early Identification of Giftedness and Talent

Five factors (i.e., themes) were created in the first analysis:

(1.1) Knowledge about giftedness and talent

(1.2) Opportunities for all children to demonstrate their abilities

(1.3) Identification strategies

(1.4) Collaborations (professionals and parent)

(1.5) Teacher education and professional development

Knowledge about Giftedness and Talent

The first factor (i.e., theme) revolves around the importance of teachers (does not exclude other preschool and school staff members in this review) having knowledge about characteristics of giftedness and talent. Teachers need to know what giftedness and talent are to identify such abilities.

According to the review, there are several characteristics of giftedness and talent (Table 3). One overall characteristic is a high ability to learn, that is, rapid and effortless learning. These are characteristics that teachers should pay attention to during early identification. All reviewed articles relate to this factor.

Table 3. Characteristics presented in the articles, and examples

Characteristics	Examples
Curiosity-driven behaviour	Asks specific and clever questions, wonders, engages oneself in theories, and explores further. Is a keen and curious observer.
Concentration, motivation, and intense interests	A long attention span, a willingness to learn, lots of energy and enthusiasm in a topic, and stays on task despite setbacks. Loves, for example, art, dance, music, and/or sport.
A high general intelligence and ability for logical thinking; also creativity and problem-solving ability	Enjoys solving puzzles designed for older children, engages in complex games, thinks quickly and processes information rapidly, foresees outcomes, imagination, makes connections between topics, understands abstract concepts, and solves problems. Imagination, perfectionism, flexibility, structuredness and high ambitions.
A strong memory	Demonstrates strong memory and retention of what has been learned.
Developed perceptions	Good understanding of both visual and verbal impressions, for example in dances and lyrics.
High ability to express oneself and language competence	Early talk, broad vocabulary, long and correct sentences, verbalization, and communications skills. Early reading and above average ability in reading, both decoding and reading comprehension. High language competence regarding writing (i.e., early letter and sounds awareness, and writing skills).
Advanced motor skills	Early and advanced fine motor skills (e.g., grasping and holding objects), gross motor skills (e.g., early walking, high bodily awareness, and smooth movement), a high degree of energy, kinesthetic intelligence, and spatial abilities.
Social competence and leader skills	Prefers older companions/friends, excels in leadership, and shows interest in social issues. Maturity for his/her age, self-confidence, and precociousness.
Subject-specific knowledge and high academic performance	Rapid and effortless learning in preschool and school (e.g., computer program, language, and mathematics) and performs well on tests.
Humour	Great sense of humour.
Compassion	Sensitivity, a sense of fairness, conscientiousness, empathy, and responsibility.
Other examples	At time, bluntness and non-flexibility in socializing with others and question authorities in ways that can be perceived as negative.

Note. The examples should be read as in relation to same-age peers.

Opportunities for All Children to Demonstrate Their Abilities

The second factor reflects that teachers should provide challenges for all children to make it possible for them to demonstrate their abilities. Teachers who provide challenges, for example a problem to be solved, are likely to stimulate children to express themselves in various ways and perform at levels that display giftedness and talent, making it possible and easier to identify gifts and talent among children. Articles related to the second factor are those numbered 2-4, 6-12, 15, 17-18, 21 and 22, and explicitly 4, 17 and 22.

Identifications Strategies

The third factor, closely related to factor 2, focuses on strategies that teachers should be familiar with

and use to identify giftedness and talent among children, according to the review. This factor implies that several strategies (Table 4) are useful and valuable for teachers. Strategies relate to one child, a few selected children, or the whole class, and different methods, instruments, and media are useful and valuable. Articles related to the third factor are 2-4, 6-12, 14-15, 17-19, 21 and 22.

Table 4. Identification strategies presented in the articles and descriptions

Strategies	Descriptions
Observation	A teacher observes children and identifies characteristics of giftedness and talent.
Comparison	A teacher compares a child's abilities, test results or grades with those of same age peers and makes a conclusion regarding giftedness and talent.
Teacher nomination	A teacher nominates a child whom he/she thinks is gifted and talented.
Self-nomination	A child tells a teacher of his/her giftedness and talent, the teacher listens and recognises this.
Peer nomination	A peer nominates a child whom he/she thinks has outstanding abilities.
Video recording or pictures and analysis	Video recording and analysis of a child's characteristics (giftedness and talent). One example is a recording and analysis of a child's dance movements to identify early dance talents via the instrument Measures of Creativity in Sound and Music developed by Wang in 1985 (see article 4).
Portfolio	Having a portfolio for each child in a preschool or school. A portfolio comprises samples (e.g., texts, photographs) of a child's educational activities and work, and shows a child's development over time. A teacher follows and analyses a child's development through a portfolio and makes a conclusion regarding giftedness and talent.
Interview	A conversation regarding giftedness and talent.
A school contest or competition	A contest or competition in which children demonstrate their abilities. A teacher observes and identifies characteristics of giftedness and talent. "Contents and competitions serve as a means to spot talented students" (18, p. 7).
Screening test	A teacher screens the whole class or some selected children by means of a screening tool. Screening is useful and valuable in the beginning of an early identification process, "which involves selecting the potentially gifted and talented from among the students" (18, p. 7). Screenings are universal or near universal; "universal screening provides the best opportunity to identify the highest number of students with gifted potential" (16, p. 430). Two examples of screening test: • Naglieri Non-Verbal Ability Test7 (NNAT2) developed by Naglieri in 2008 (see article 7) is used to assess general abilities through non-verbal tests. • Cognitive Abilities Test7 (CogAT7) developed by Lohman in 2011 (see article 7) is used in groups, covering verbal, quantitative, and non-verbal ability domains.
Tests	Tests developed to identify gifts and talents. Examples are: • Gifted Identification Kit developed by a research team in the USA, to discover gifted children through ten different learning settings, including mathematical, analytical, spatial, and linguistic settings. • The Primary Mental Abilities Test (PMA 5-7), developed by Thurstone and Thurstone in 1981 (see article 8), widely used for prequalification (8, p. 447) consisting of subsections for language, discrimination ability, concept of number and space. • Goodenough-Harris' Draw-a-person Test for children, developed by Harris in 1963 (see article 5 and 8), is a general aptitude test to measure mental development.
Structured observation	A teacher observes children in everyday activities and identifies characteristics of giftedness and talent using structured observation. One example is: • Teacher Observation Forms (TOF), developed by Leroux and McMillian in 1993, (see article 8) to nominate potentially gifted children. It consists of general features and characteristics of gifted behaviour, including sections on learning, creativity, and leadership.
Checklists and scales	A protocol taking the form of a checklist comprising characteristics of giftedness and talent. A teacher compares a result related to a child with one or several same-age peers. A protocol taking the form of scale (e.g., 1=never to 6=always) to identify giftedness and talent. Examples of checklists and scales are: • The Characteristics of Giftedness Scale (CGS), developed by Silverman in 1973 (see article 10), for early identification of intellectually gifted children; it captures behavioural characteristics through a four-level scale. • Scale for Rating the Behavioural Characteristics of Gifted and Talented Students, developed by Demirok and Ozcan in 2016 (see article 12), regarding teachers' perception about gifted children and their characteristics. Through a 5-point Likert scale, graded from 1=strongly disagree to 5=strongly agree, 33 items in five factors − willingness to learn (n=9), expressions characteristics (n=8), personal characteristics (n=6), learning characteristics (n=6), and mental characteristics (n=4) − are considered. • Having Opportunities Promotes Excellence (HOPE-scale), developed by Peter and Gentry in 2012 (see article 15), to identify characteristics that may indicate giftedness and talent in children from low-income and/or culturally diverse families/backgrounds "who may not 'shine' academically"

	(15, p. 425). Eleven items are sorted as academic (n=6) and social (n=5). Examples include eager to explore new concepts, thinks outside the box, and shows compassion for others on a 6-point scale (1=never to 6=always). • Scale for Rating the Behavioural Characteristics of Superior Students (Renzulli scale), developed by Renzulli in 2002 (see article 14). Three extracts from this scale are: "The student demonstrates: advanced vocabulary for his or her age or grade level, the ability to grasp underlying principals, the ability to deal with abstractions". The answer is 1=never, 2=very rarely, 3=rarely, 4=occasionally, 5=frequently or 6=always.
Questionnaire	A teacher and/or parent answers a questionnaire in which giftedness and talent are in the foreground.

Note. Descriptions of instruments are created from the explanations in the articles.

Collaborations

The fourth factor (theme) demonstrates that teachers should collaborate with other professionals and parents during early identification. For example, teachers should cooperate with second language teachers and special education needs coordinators since they may have other insights on gifts and talents that the teachers do not have. Two more examples are a child or school psychologist who helps a teacher to identify giftedness, for example using WISC-R, and an administrator who cooperates during the administration and conduct of standardised tests. Articles related to this element of the fourth factor are 1, 3, 5, 9, 17-18 and 20-21.

This factor also revolves around teachers interacting and collaborating with parents. The theme reflects the importance of parents (i.e., a child's caregiver) sharing information about their child, and teachers listening to parents. This information from parents may encompass descriptions of gifts and talents, and also any difficulties those children may have (i.e., twice exceptionality). One quote from article 8 is: "It is an undeniable fact that parents and teachers are indispensable in the early identification of gifted children" (p. 449). Another quotation (article 18) is as follows: "From parents to teachers, everybody plays a vital role in determining students with giftedness" (p. 5). Parents' motivation for early identification is a decisive factor, and, at times, a formal request from a parent is what initiates an early identification process. This can be referred to as a parent nomination. For example, a parent observes his/her child, makes recordings or a portfolio, compares with other children, and tells a teacher of his/her child's giftedness and talent. The Parent Observation Form (POF), developed by Leroux and McMillian in 1993, is one example of an observational form for parents; it contains general features and characteristics of children's gifted behaviour. However, at times, parents can overestimate their children.

Articles related to this element of the fourth factor are 5, 6, 8-10, 17-19 and 21-22.

Teacher Education and Professional Development

The fifth factor implies that teacher students (i.e., prospective teachers) should be given opportunities to acquire knowledge about giftedness and talent, and early identification, for example by way of a (compulsory) course on giftedness and talent within their teacher education. Articles related to this element of the fifth factor are 1-2, 9 and 20.

This factor also implies that teachers and other staff members already working in a preschool group or school class should be given opportunities to continuously develop and increase their knowledge about the characteristics of giftedness and talent, and early identification, as required, for example by way of in-service training, an online course (perhaps the course given to teacher students), webinars, workshops, academic conferences, and a professional learning community. According to the review, other ways include the use of books, brochures, television programmes, and seminars. Articles related to this element of the fifth factor are 1, 8-9, 12 15, 20 and 23.

Furthermore, according to the review, some teachers experience uncertainty about identifying gifted and talented children while simultaneously expressing a desire to learn and know more, for example about characteristics of giftedness and talent and ways to identify them. Well-educated teachers prepared for these matters easily notice characteristics of giftedness and talent and are also aware of various methods strategies of identification and how to make these (more) equitable.

Contextual and Environmental Factors that Contribute to Well-Functioning Inclusive Education

The results continue with RQ2. In addition to early identification, five factors (themes) were created in the second analysis:

(2.1) Policies recognising inclusion and gifted and talented children

(2.2) An appreciation of diversity

(2.3) Additional educational provisions

(2.4) Peer interactions and learning

(2.5) Home-school partnership

Policies Recognising Inclusion and Gifted and Talented Children

The first factor stresses that inclusion and gifted and talented children should be recognised in educational policies and recommendations. One example is to advocate for additional educational provisions. From such a governmental level, adequate resources should also be provided. Article 1 concludes that "it should be mandatory that all early years teachers engage with the concept of giftedness" (p. 226), and article 20 underlines the importance "of an education that allows all children to develop as far as possible" (p. 282). Article 23 concludes: "To meet the learning needs of highly able children, the government should reform the education system and provide more educational resources so that highly able children are properly supported in regular class teaching" (p. 13). Articles related to the first factor are 1, 12, 17-18, 20 and 23.

Appreciation of Diversity

The second factor reflects the importance of teachers appreciating all children, including gifted and talented children. Some examples include: teachers who provide children a secure everyday life in preschool and school; teachers who are willing to support and stimulate children in their learning; teachers who ensure that children sense success, accomplishment, and meaningfulness; and teachers who are aware of twice-exceptionality and pay attention to both special educational needs and gifts and talents in preschool and school. Articles related to this element of the second factor are 1, 13, 15, 17, 20 and 23.

This theme also reflects the importance of principals appreciating all children at their preschools and schools, including the gifted and talented children. Principals should demonstrate an insight (such as knowledge about giftedness and talent), a willingness to cater for all children, and provide adequate resources (e.g., time for planning and collaboration with colleagues) to teachers. When given these resources, teachers can provide the necessary support and additional educational provisions to the children. Article 20 states that principals "have a key role in terms of if and how gifted children are supported" (p. 271). Articles related to this element of the second factor are 3, 9, 18, 20 and 23.

Additional Educational Provisions

The third factor indicates the importance of giving additional educational provisions to gifted and talented children to ensure they receive a suitable education. According to the review, there are several types of educational provisions. These are inclusive and are referred to as challenging learning tasks and stimulating activities, such as extra or more work, additional tasks, activities, and homework. They also encompass enriched activities, enrichments, and enrichment programs to help children develop interests; differentiated programs, different tasks, activities, and programs; projects rooted in the children's interests; and acceleration (e.g., an acceleration program or grade skipping). These often include opportunities for high-level thinking and assignments aligned with the child's strengths and interests, aiming to motivate and inspire, as well as offering opportunities for a child to exchange ideas, solve problems, conduct experiments, participate in discussions, and engage in tasks on a higher abstract level. These provisions are also referred to as gifted programming, special programs, special classes in selected subjects away from their class, elements of pull-out (e.g., a mentor outside his or her regular classroom, separate special classes,

and special out-of-school activities like weekend, summer or holiday programs and courses), which are not always inclusive oriented.

For these provisions, a wide range of activities (e.g., various types of teacher instructions, brainstorming, group work and self-discovering learning, and teachers who model, interact, scaffold, and endorse), materials (i.e., a variety of supplementary materials such as advanced reading material), and technology tools (e.g., mind and intelligence games) are needed. For this, curricula flexibility and a flexible pacing are also necessary, along with less crowded classrooms, larger classrooms, classroom modifications, teacher energy and willingness, and teachers who collaborate with others.

According to the review, inclusive education benefits gifted and talented children and their peers. Two reasons are that gifted and talented children encourage their peers to pursue excellence, and they develop social skills in inclusive education. However, there are concerns that inclusive education may curb the development of gifts and talent. Therefore, the following conclusion, relating to partial inclusion, is made in article 18: "inclusion with adjunct special sessions or classes might be a better learning set-up" for gifted and talented children (p. 8). Articles related to the third factor are 1, 3-4, 7, 9, 13, 15, 17-21 and 23.

Peer Interactions and Learning

The fourth factor demonstrates the importance of teachers encouraging peer interactions and learning with peers, as well as between like-minded gifted and talented children. Having gifted and talented students together is what 'like-minded' refers to. According to the review, gifted and talented children need and benefit from peer interactions, also with like-minded, for example, facilitated through enrichments, group work, or a special class or similar. Articles related to the fourth factor are 3, 9, 13, 17 and 18.

Home-school Partnership

The fifth factor highlights the importance of teachers working in partnership with and supporting families of gifted and talented children. Teachers need to meet these families with a positive attitude, helping parents to understand the characteristics of giftedness and talent when this is new for them, and supporting them in how to cater for a child with gifts and talents. When working in partnership with families and supporting them, both the (pre)school and home environment will play a significant role in the children's development, two examples being their reading skills and talent development. Articles related to the fifth factor are 9, 10, 18, 20 and 23.

Conclusion and Discussion

The review revealed various contextual and environmental factors contributing to early identification, and to achieving well-functioning inclusive education. These factors do not conflict with each other; instead, they can be understood as interplaying factors complementing one another.

The authors have created a factor model for early identification and well-functioning inclusive education targeting giftedness and talent (Figure 3). It is rooted in the review's results and provide a visual overview. The model can form the basis for important preschool and school discussions and professional development, since it shed light on factors, from the micro to the macro, in need of attention and improvements. The small circles in the model demonstrate, and remind its users of, that early identification is an ongoing process.

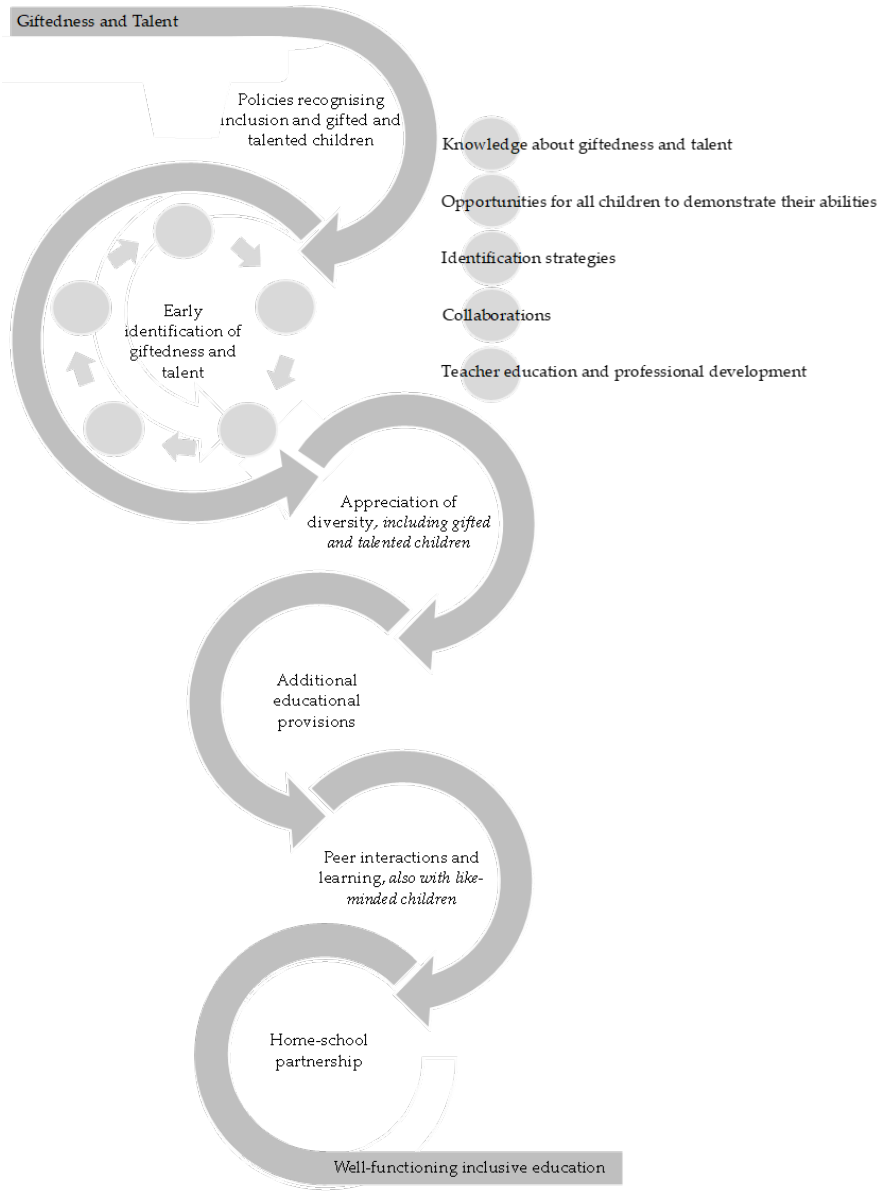

Figure 3. A Factor Model for Early Identification and Well-Functioning Inclusive Education targeting Giftedness and Talent
Note. Various contextual and environmental factors contributing to achieving well-functioning inclusive education. The small circles demonstrate early identification as an ongoing process.

All the created factors (i.e., themes) can be placed within the four contextual systems outlined in the bioecological model for human development (Bronfenbrenner & Morris, 1998, 2006). This includes the microsystem (e.g., knowledge about giftedness and talent; opportunities for all children to demonstrate their abilities; identification strategies; appreciation of diversity; peer interactions and learning; additional educational provisions), the mesosystem (e.g., home-school partnership), the exosystem (e.g., collaborations, teacher education, and professional development), and the macrosystem (e.g., policies recognising inclusion and gifted and talented children). Thus, according to the bioecological model, these are influential contextual factors on children's intellectual, social, emotional, and moral development. It is also possible to relate some elements of the factors to the biosystem (i.e., the child as a person) and chronosystem (e.g., when identification should occur). All the factors (themes) can also be related to the DMGT proposed by Gagné (2021). Corresponding to the DMGT, these are environment catalysts (i.e., social, interpersonal, and educational) for talent development, allocated in between gifts and talents in this model. It is also possible to relate some parts of the factors to the intrapersonal catalysts (i.e., the child as a person). This means that the review provides insight into early identification and well-functioning inclusive education in relation to these two theoretical models. This may facilitate and enhance the use and

value of these factors and theories in preschools and schools.

Noteworthy Results and Implications Related to Early Identification

First, the results show that early identification of gifted and talented children goes beyond IQ tests, and that a high IQ alone should not be equated with giftedness and talent. Thus, one important implication is to not solely rely on an IQ test during early identification, but rather view giftedness and talent in a broader perspective. *Second*, even though early identification is a process depending on several factors, all its elements do not necessarily require considerable amounts of a teacher's time. For example, using a scale does not need to take much time. *Third*, the results of the review suggest that early identification is a shared responsibility. Teachers play an important role but so do principals, colleges, parents, and peers. It is, however, crucial for teachers and principals to understand their pivotal role and undertake leadership positions on this matter. This is reflected in the many factors (i.e., themes) directly related to teachers and principals. These noteworthy results are acknowledged in the model's small circles (Figure 3).

Noteworthy Results and Implications Related to Well-Functioning Inclusive Education

First, the factors contributing to well-functioning inclusive education go beyond one or two additional educational provisions; policies recognising inclusion and gifted and talented children; appreciation of diversity; additional educational provisions; peer interactions and learning; and home-school partnership, also have an influence, as illustrated in the model (Figure 3). *Second*, an early identification of giftedness and talent is not a motive for exclusion, that is, a direct placement in segregated education or special classes. Rather full inclusion or partial inclusion with some elements of pull-out provisions is to be preferred, according to this review. *Third*, the results of the review suggest that child development, including talent development, is a shared responsibility. Teachers and principals play an important role but so do parents, as also illustrated in the model.

Limitations, Knowledge Contribution and Suggestions for Further Research

This review has limitations. It was restricted to articles published in English. Only two databases and some hand searches were used. The review does not reveal whether there are identification strategies that are more widespread or effective than others, or if a certain order of identification strategies is to be preferred. Moreover, under-achieving children and under-represented groups of children with gifts and talents are not in the foreground of this review. Neither does the review reveal whether there are factors that are more important than others for achieving well-functioning inclusive education.

Despite its limitations, this international scoping review provides knowledge on factors that contribute to well-functioning inclusive education, with a particular focus on early identification of gifted and talented children. The review and its theoretical framework are not context-bound but relevant in different countries and educational systems. Some examples of differences are available resources in educational settings, collaboration strategies (e.g., between teacher and parents, and between teachers, special education teachers, and specialists in giftedness and talent), teacher training opportunities, culture emphases on giftedness and talent, and policy implementation (see Adedoyin & Chisiyanwa, 2018; Al-Mahdi et al., 2021; Persson, 2010; Reis & McCoach, 2000). For example, a country with low-resource educational settings, lack of specialized educational training, or cultural barriers such as negative attitudes towards giftedness and inclusive education, will face different challenges than those with high-resource educational settings, specialized educational training, and positive attitudes. While different countries and educational systems can learn and gain insights from the review and its theoretical framework, they have various pathways to early identification and achieving well-functioning inclusive education for gifted and talented children.

Further research could investigate whether there are more influentials factors, and whether some factors are more widespread or effective than others. Further research could also explore how gifted and talented children and their parents experience early identification of giftedness and talent to ensure these are linked to positive experiences. In further research, parents and families can be mentioned in the target population, alongside children and teachers in educational settings (Table 1). Moreover, further research

on early identification and inclusive education could pay particular attention to under-achieving and under-represented groups of children with gifts and talents. In addition, further research might investigate and validate the use and value of the Factor Model for Early Identification and Well-Functioning Inclusive Education targeting Giftedness and Talent, in particular identification strategies (i.e., factor and theme 1.3) suggested in the review, in different countries and inclusive educational settings. One final suggestion for further research is innovative models for teacher training.

Relevance

The review provides important knowledge since previous studies have shown there is room for improvement on such matters as inclusive education and early identification of giftedness and talent (Brighton & Jarvis, 2017; Grant & Morrissey, 2021; Harju-Luukkainen et al., 2022; Luria et al., 2016; Margrain & Lundqvist, 2019; Pardeck & Murphy, 2018; Peters et al., 2020). Inclusive education is an international agreement and goal (UN, 2015; UNESCO, 1994), development to one's fullest is a human right (UN, 1989), and identifying and nurturing giftedness (and talent) have great significance for society at large in the progress towards a better and more sustainable world (Gallagher & Gallagher, 1994; Sternberg, 2022, 2023).

It has relevance to policymakers, principals, head teachers, teachers, parents, teacher educators, educational researchers and others interested in early identification of giftedness and talent, childhood, inclusive education, and sustainable society. The review is, as we see it, of particular importance in countries where giftedness and talent in preschool and school is a growing field of knowledge, for example Sweden.

Declarations

Authors' Declarations

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