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Participation as a lens to measure inclusion internationally – The case of young children with disabilities

Janina Dott[1] and Ulla Licandro

Abstract

CONTEXT: Participation can be seen as a requirement as well as main outcome of inclusion and as a way to evaluate inclusive education. While it is widely understood that participation in early childhood education and care (ECEC) contributes to quality of life and fosters children's development by providing structured learning experiences and supportive interactions during critical formative years, the exact framing and operationalization depend on the context and its measurement is inconsistent. Participation may have a different meaning for different people, including children with disabilities. Recent studies showed that they participate less in ECEC than their peers without disabilities. International differences in ECEC call for the need to further elucidate knowledge about facilitators and barriers. A common understanding of participation in inclusive ECEC could support the comparison of findings between studies.
APPROACH: Drawing on participation frameworks and empirical research, this paper analyzes how international studies measure the participation of children with disabilities in inclusive ECEC using three key dimensions: (1) involvement and engagement, (2) the social context, and (3) ECEC activities. We compared studies from seven different countries that were identified in a systematic review and analyzed how they measured children's participation and what features of the local context may impact the outcome variables. The bioecological model was used to emphasize the meaning that influencing factors on different levels have for children's participation.
FINDINGS: While all studies considered the three key dimensions, they varied in the research approaches used as well as in the significance they placed on those aspects. The analysis of participation on the microlevel, i.e., the daily practices in ECEC, took place using observations or questionnaires. Levels or types of involvement/engagement were used repeatedly to measure children's participation. With regard to the social context, it differed how closely the studies assessed interactions or social relationships, but they examined similar activities. Several consequences for the assessment of participation and adopting an international perspective on children's participation in inclusive ECEC emerge.
KEY MESSAGE: Our conceptualization identifies similarities in the assessment of participation in international studies and can provide recommendations for further research on inclusive ECEC. But as the local context of a study influences daily practices, we must reflect on the interrelations of the micro-, meso-, exo-, and macrolevel to fully understand how to measure and improve the possibilities children with disabilities have for equal participation.

Points of Interest

- Inclusion starts well before children enter school, but many studies show that even when children with disabilities attend inclusive early childhood education and care (ECEC), they tend to participate less than their peers.
- It is therefore an important question how we can best support the participation of children with disabilities. However, it is difficult to find answers to this question as ECEC is structured and organized differently across countries and studies use unclear definitions of participation.
- Based on participation frameworks and studies from seven countries, we found children's involvement and engagement in different activities as well as interactions with peers and adults to be key aspects to measure participation and discuss implications for further research.

[1] Corresponding author: janina.dott@uol.de

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- While it is important to keep international differences in mind, we argue that a shared lens on and approach to measure participation may be helpful to learn from each other's experiences.

Keywords: participation, early childhood education and care, inclusion, conceptualization, international comparison

1 Introduction

The importance of inclusion as a guiding concept in all areas of education increased in recent years, especially since international agreements like the Salamanca statement (UNESCO, 1994). Different authors interpret the concept in different ways, ranging from the placement of children with disabilities in regular schools to a broader perspective that focusses on creating learning environments and communities that meet the individual needs of all children (Edström et al., 2022). This also applies to early childhood education and care (ECEC)[2] as the first stage of (in-)formal education in many countries. Inclusion in ECEC is a research area of increasing significance, with one focus being the inclusion of children with disabilities (Symeonidou et al., 2023). Based on McGuire and Meadan (2022), inclusion can be described as "children with delays and disabilities being integrated into the classroom and school communities, having equitable and active participation in social activities with typically developing peers, and having reciprocal and positive relationships with peers and adults" (p. 63). The United Nations' Convention on the Rights of the Child (CRC; UN, 1989) and the Convention on the Rights of Persons with Disabilities (CRPD; UN, 2006) clearly state the right of all children for equal and unrestricted participation in education. Several studies highlight developmental benefits for both children with and without disabilities (e.g., Blackmore et al., 2016; Buysse & Bailey, 1993), with inclusion supporting social acceptance and friendships (Guralnick, 1999; Odom et al., 2011). However, quantitative and qualitative research indicates that children with disabilities form smaller social networks and participate less, especially in peer interactions and unstructured activities like free play (e.g., Benjamin et al., 2017; Chen et al., 2019; Folha & Barba, 2022; Golubović et al., 2022; Hu et al., 2016; Kuutti et al., 2022; Olsen et al., 2019). Still, not all studies found significant differences between children with and without disabilities (e.g., Åström & Almqvist, 2022).

Despite growing interest in research on inclusive ECEC, there is limited evidence on influencing factors and what facilitates or hinders children's participation (Castro & Pinto, 2015). An international perspective is needed to look beyond one's own national context to draw conclusions for an evidence-based practice (Campbell-Barr & Bogatić, 2017). But until today, there is no global strategy on how to achieve inclusion for young children with disabilities (Olusanya et al., 2024) and it remains unclear how the definition and assessment of participation varies in different countries and what influence this may have on study results. International differences in policy guidelines and the structure of ECEC as well as different constructions of inclusion and disability complicate the comparison of findings. A common framework may support comparability, but should leave room for adaptations to the local context. Therefore, this paper addresses the following research questions: 1. What do studies measure when they explore the participation of children with disabilities in inclusive ECEC? 2. What are similarities and differences? 3. How can we conceptualize participation while accounting for international differences?

1.1 The construct of participation

Participation and inclusion are closely interrelated concepts. Participation is often seen as an outcome of inclusion, resulting from the interaction between a person and their environment (Ullenhag et al., 2024). It can also serve as a measure of inclusive education (Edström et al., 2022; Maxwell et al., 2018), with the leading question being: How well can children with diverse needs and skills participate in inclusive education as it is today? The *International Classification of Functioning, Disability, and*

[2] For this article, we chose the umbrella term 'early childhood education and care' (ECEC) to include various organized arrangements and services that provide education and care for children from birth to the compulsory primary school age, e.g., preschool, day care, and kindergarten.

Health (ICF) defines participation as "involvement in a life situation" (WHO, 2001, p. 10), offering a framework to understand the relationship between health conditions, body functions and structures, contextual factors, and activities and participation. However, different authors point out ambiguities, especially regarding the distinction between activities and participation (Coster & Khetani, 2008; Piškur et al., 2014). Whiteneck and Dijkers (2009) suggest that participation is defined by a social context, requiring interactions with others or the performance of social roles. So, carrying out an activity or executing a task can only be interpreted as participation if it involves interactions with other people or is an explicit part of one's social role. Participation also includes the performance of several activities and therefore is more complex and environmentally dependent than activities alone (Rainey et al., 2014; Whiteneck & Dijkers, 2009). It is influenced by both personal and environmental factors (WHO, 2001). Personal factors include impairments in children's language and communication skills, social-emotional development, cognitive development, or motor proficiency. Together with their general needs, wishes, preferences, and ideas, they should be evaluated when analyzing participation. Additionally, the immediate ECEC environment (e.g., adult/child ratio, attitudes of teachers, pedagogical approach) influences the educational opportunities children have.

Building on and expanding the ICF definition, a bi-dimensional construction of participation that incorporates the attendance and involvement in an activity as well as the influence of environmental factors has been proposed (Granlund, 2013; Maxwell et al., 2012, 2018). One framework that integrates those aspects is the *family of participation-related constructs* (fPRC) by Imms et al. (2017) where attendance and involvement are the two main components of participation. While attendance (as in "being there"; Imms et al., 2017, p. 18) can be measured as the frequency or range of activities an individual attends, involvement is considered "the experience of participation while attending" (Imms et al., 2017, p. 18) and includes elements of engagement, motivation, or level of affect. Attendance, then, is a necessary, but not sufficient prerequisite for involvement (Ullenhag et al., 2024). Especially in inclusive ECEC, it is important to consider engagement as it is a well-studied outcome influencing the development and learning of children (Adolfsson et al., 2018; Hojnoski et al., 2020). Different frameworks and literature reviews describe engagement as one of several subconstructs of participation (e.g., Adair et al., 2018; Imms et al., 2017). In some instances, it is used synonymously to involvement or seen as a way to operationalize it (Adolfsson et al., 2018; Pinto et al., 2019; Ritoša et al., 2023). A common definition is proposed by McWilliam and Bailey (1995), who describe engagement as "the time children spend interacting with the environment in a developmentally and contextually appropriate manner" (p. 123). Referring to "developmentally appropriate" engagement could cause difficulties when looking at children with disabilities, as it may impose normative developmental standards that overlook diverse ways of interacting and learning. However, the concept can still be useful as a general guideline for understanding and supporting children's interactions with the environment, provided that it is applied flexibly and inclusively to accommodate diverse developmental pathways.

When it comes to empirical research, it is often unclear how exactly participation is understood and there may be a mismatch between the definition and assessment of participation (Imms et al., 2016, 2017; Piškur et al., 2014). A major challenge lies in the selection and development of measures that can adequately capture participation and especially the subjective experience of participating, namely, involvement (Adair et al., 2018; Granlund, 2013; Phillips et al., 2013). But Maxwell et al. (2018) argue that "further clarity on defining and measuring participation […] is required in order to create a more consistent tool for investigating inclusive education" (p. 13). We conclude that the assessment of participation in inclusive ECEC should include measuring involvement or engagement (as the subjective experience of participation), the social context (to differentiate participation from activities), and analyze these aspects in several activities to take into account the influence of the environment (Imms et al., 2017; Rainey et al., 2014; Whiteneck & Dijkers, 2009).

1.2 A multi-level perspective on participation in inclusive ECEC

Following the bioecological model of human development (Bronfenbrenner & Morris, 2006), Ullenhag et al. (2024) propose a multi-level approach to reach participation in an inclusive society. On each level, the four defining properties of the model, i.e., process (e.g., interactions between children and their

environment), person (e.g., children with disabilities), context (e.g., education), and time (e.g., early childhood) as well as their influence on one another should be contemplated. In the context of inclusive ECEC, the microlevel is concerned with children's everyday activities and interactions with peers and adults. Bronfenbrenner and Morris (2006) describe that "participation in such interactive processes over time generates the ability, motivation, knowledge, and skill to engage in such activities both with others and on your own" (p. 797). The specific characteristics of the individual child, but also features of the ECEC environment influence these interactions and therefore have to be taken into account. The other levels become important when thinking about additional factors influencing participation: On the mesolevel, aspects such as family characteristics or early intervention influence the microlevel processes, as they may have an impact on children's behavior. This also applies to other social systems children participate in, such as community activities or health care as well as interactions between these settings (i.e., the exolevel). And from an even broader perspective, the macrolevel, we have to consider general societal and historical conditions that influence the life and participation of young children with disabilities. This includes the structure and organization of ECEC, the implementation of inclusive practices, and current educational trends as well as global policy documents like the CRC and CRPD (UN, 1989, 2006). All of those levels will experience change over time (as reflected in the chronolevel; Bronfenbrenner & Morris, 2006). Especially in early childhood, participation goals may have to be adapted to children's changing needs and skills (Ullenhag et al., 2024).

1.3 Comparative research in ECEC

In contrast to other sectors of education, there is a relative scarcity of comparative studies focusing on ECEC (for an overview, see Sousa & Moss, 2022). Existing research typically emphasizes cross-national differences in the structure and organization of ECEC systems, while comparatively less attention is given to cultural contexts and underlying values. When examining the participation of children with disabilities, additional critical factors emerge – like prevailing understandings of inclusion and disability – which significantly influence practice and policy.

The overall policy aims of ECEC (e.g., to support children's development, parental employment) can differ as it is used "to meet a spectrum of social, economic, educational and political demands" (Bertram & Pascal, 2016, p. 1). While some ECEC services focus on children's readiness for school, others emphasize its role as a universal foundation for life-long learning (Kluczniok & Schmidt, 2020). There is a variety of services and providers, even within countries, ranging from kindergartens to nursery schools, preschools, or day care (Sousa & Moss, 2022). Differences relating to staff qualification, adult/child ratio, national curricula, and overall educational philosophy can have consequences for daily practices, routines, activities, and interactions (Bertram & Pascal, 2016; Campbell-Barr & Bogatić, 2017; Coelho et al., 2021). Gunnestad et al. (2022) outline three types of values that influence the culture in ECEC institutions: educational values (e.g., inclusion), a countries' general political and society-related values (e.g., peace, democracy), and individual and relational values (e.g., respect, tolerance, honesty). In addition, more practical values like play or creativity are relevant. Globalization has led to many shared values across countries, often resulting in a homogenized view on education and the proposal of global solutions based on research predominantly from the Global North (Guevara, 2022). However, how these values are prioritized varies within and between countries (Coelho et al., 2021; Gunnestad et al., 2022). Guevara (2022) and others argue that these differences should not be overlooked, emphasizing the need for openness to diverse perspectives, local solutions, and adaptations to fit a specific context.

Countries also vary significantly in the enrolment of children from low-income families, minority groups, or with disabilities (Bertram & Pascal, 2016; Olusanya et al., 2024). Especially for inclusive ECEC, international differences in both implementation and conceptualization become apparent (Tan et al., 2024). These differences may be attributed to diverse goals and educational philosophies underpinning ECEC, as well as to varying understandings of disability. Globally, a shift from the medical model of disability – which focusses on individual impairments (physical, sensory, or intellectual) and views disability as a person-inherent feature – to a social model can be observed, as exemplified by the CRPD: "Disability results from the interaction between persons with impairments

and attitudinal and environmental barriers that hinders their full and effective participation in society" (UN, 2006, p. 1). However, the extent to which this understanding is adopted and translated into inclusive practices varies. These variations are shaped by historical developments in the education of children with disabilities and other marginalized groups, as well as by differing economic conditions and cultural contexts (Bines & Lei, 2011).

2 International studies on the participation of children with disabilities in inclusive ECEC – similarities and differences

The variation in how participation is defined, operationalized, and measured – combined with international differences in ECEC systems as well as historic and current approaches to the inclusion of children with disabilities – poses challenges for the international comparison of studies to derive generalizable implications. Notably, the relationship between macrolevel-factors (e.g., ECEC policy and structure) and their manifestation at the microlevel, particularly in studies on children's participation, remains underexplored. In response to this gap, the present paper seeks to examine how international research conceptualizes and measures participation in inclusive ECEC. Our analysis is guided by three key dimensions: (1) involvement and engagement, (2) the social context, and (3) ECEC activities. This approach aims to facilitate the identification of a shared conceptual understanding of participation, while also accommodating methodological approaches that are sensitive to the unique features of local contexts.

2.1 Methodology

In the following sections, seven studies from seven different countries will be compared. They were selected based on a previously conducted systematic review (Dott & Licandro, 2024; an updated version was published by Dott & Licandro, 2025) which focused on the definition and operationalization of participation along with findings on the participation of children with disabilities in inclusive ECEC. Various databases (ERIC, Education Source, PsycINFO, Web of Science) and scientific journals (e.g., Early Childhood Research Quarterly; European Early Childhood Education Research Journal; International Journal of Disability, Development and Education; Topics in Early Childhood Special Education) were searched for peer-reviewed articles based on previously defined criteria. Ultimately, 25 studies from eleven countries were included. We decided to choose one study from each country represented that fit the following criteria: a) They present background information on the local context of the study, b) follow a quantitative approach, and c) assess children's participation via involvement or engagement and its social context in various activities. When we say local context, this includes information on overarching aspects at the macrolevel, such as national curricula and policy guidelines as well as the specific culture of a country, region, or individual ECEC institution that can influence daily practices (Campbell-Barr & Bogatić, 2017). The restriction to quantitative studies was made to ensure the comparability of research methods and to focus on the measurement of participation, including insights into potential tools.

In total, we identified studies from seven countries that fit the selection criteria. If multiple studies from one country met the criteria, the most current study was selected. Some studies applied a very similar design or were conducted by the same research groups (e.g., Syrjämäki et al., 2023 and Kuutti et al., 2022 from Finland). They were used as an additional source if they provided more in-depth information on the study design or local context.

The selected studies were then analyzed and compared based on five criteria:

1. Features of the local context
2. Research aim and focus of the study
3. Definition of participation and/or related constructs
4. Methodology and measures
5. Outcome variables relating to involvement/engagement, the social context, and ECEC activities

2.2 Australia

Australia offers various childcare services, including center care, family day care, and informal arrangements (Kemp et al., 2013) and the inclusion of children with disabilities is an accepted and promoted practice in ECEC (Kishida & Kemp, 2006). There has been a steady increase of children under five years attending formal childcare in recent years and children with disabilities made up 5.4 % in 2023 (Australian Institute of Health and Welfare, 2024).

Kemp et al. (2013) analyzed the engagement and interactions of children with disabilities in childcare centers with so-called inclusion support programs, focusing on the effect of activity type. When defining engagement, they referred to McWilliam and Bailey (1992, 1995), i.e., the interaction with the environment in a developmentally and contextually appropriate manner. They used the *Individual Child Engagement Record – Revised* (ICER-R; Kishida et al., 2008) which was developed by two of the authors. This observation tool differentiates four engagement types: active engagement (AE), passive engagement (PE), active nonengagement (AN), and passive nonengagement (PN). In addition, the occurrence of interactions with peers and adults is coded. Children's engagement and interactions were observed in three different activities: free play (characterized by a free choice of activities), group activities, and routines (Kemp et al., 2013).

2.3 China

When looking at ECEC in China, there seems to be a lack of legal, cultural, and professional support for inclusive services (Hu et al., 2016). Tan et al. (2024) describe that "the conceptualisation of inclusive education in the Chinese policy framework is contested, inconsistent and confusing" (p. 2). In recent years, the government's commitment to equity in education led to more research on this topic and several guidelines promote the inclusion of children with disabilities. Kindergartens for children between three and six years of age are the most prevalent ECEC program, but still, very few provide inclusive services. Compared to a lot of western countries, some differences become apparent (Hu et al., 2016): The average group size is much higher and typically ranges between 35 to 45 children, with an adult/child ratio of 15-20:1, even though recommendations call for less. Also, teacher-led activities and whole-group teaching are more prevalent. In these activities, children have to sit quietly and listen for a long period of time, which may be particularly challenging for children with disabilities. Researchers therefore describe whole-group teaching as "one of the roadblocks to facilitating inclusion in Chinese kindergartens" (Hu et al., 2016, p. 151). Staff qualification ranges from teachers to teaching assistants and aides, but they often lack the knowledge and skills for effective strategies that engage children with disabilities. Some children with disabilities receive additional special education services by a special educator outside of the inclusive classroom (Hu et al., 2016).

Similar to the previous study, Hu et al. (2016) studied the engagement and interactions of children with disabilities in inclusive kindergartens and follow McWilliam and Bailey's (1995) definition of engagement. They also used the ICER-R (Kishida et al., 2008) and accordingly observed four types of engagement (AE, PE, AN, PN). The children were videotaped in five different activities on two days each (Hu et al., 2016).

2.4 Finland

In Finland, most children with disabilities attend mainstream, i.e., inclusive ECEC groups together with children without disabilities (Syrjämäki et al., 2023). In some cases, they attend so-called integrated special groups with fewer children. Most children start ECEC at two years of age. When they turn six, one year of pre-primary education is compulsory before starting formal school. The national core curriculum promotes inclusive values and highlights that supporting development and learning should be a part of daily activities, with interaction and play being key elements (Kuutti et al., 2022; Syrjämäki et al., 2023). A typical day consists of play, guided group activities, and basic (routine) activities, like eating and sleeping (Kuutti et al., 2022).

Syrjämäki et al. (2023) analyzed the involvement, social orientations, emotions, and target of attention of autistic children. They framed involvement as a crucial criterion for quality in ECEC and defined it

as "an individual's ability and tendency to orient and focus on something with concentration and persistence" (Syrjämäki et al., 2023). Children's sense of belonging (i.e., how respected, accepted, and supported it feels by other children and adults) is seen as the basis of involvement and is closely linked to well-being. Based on Laevers (1994), the authors differentiated five levels of involvement: Level 1 was characterized by simple and stereotypic activities, level 2 by frequently interrupted activities, level 3 included mainly continuous activities, level 4 continuous activities with intense moments, and level 5 was allocated to sustained intense activities. Children's involvement and social orientation was observed throughout several activities (Kuutti et al., 2022; Syrjämäki et al., 2023).

2.5 Portugal

In Portugal, preschool starts at age three, while younger children attend childcare (Coelho et al., 2021). The main goal is to foster development, autonomy, and socialization, while preparing children for formal schooling (Coelho et al., 2021). However, pedagogical models vary as the national curriculum only provides broad principles. Children eligible for early childhood intervention or special education share classrooms with children without disabilities. Since 2008, legislation has supported the rights of children with disabilities and improved ECEC services, with the ICF used as a tool to assess children's functioning and participation (Coelho & Pinto, 2018). Preschool teachers are expected to create inclusive learning environments and activities for all children. Coelho and Pinto (2018) note that classrooms in their study included 1 to 5 children with disabilities and teachers had at least a degree in preschool education, with varying work experience. A lead teacher with a higher education degree is required in Portugal (Coelho et al., 2021).

Coelho and Pinto (2018) analyzed the relationship between children's developmental functioning and their participation in social activities in inclusive preschool settings. They define participation according to the ICF and fPRC, with the two dimensions for operationalizing it being frequency and engagement (as defined by McWilliam and Bailey, 1992, 1995). In addition, they highlight engagement as being related to "a sense of wellbeing, flow and to feelings of belonging and comfort in the setting/activity" (Coelho & Pinto, 2018, p. 3). Developmental functioning, including information on children's activities and participation, was assessed using the *Matrix of Assessment of Activities and Participation* (MAAP; Castro & Pinto, 2015). For measuring engagement, they used a five-point involvement scale ranging from "low engagement" to "high engagement" which is part of the observation system *Child Observation in Preschool* (COP; Farran, 2014). Low engagement was assigned when a child was totally out of task or not paying attention, while high engagement meant that a child showed intense focus, serious persistence in the pursuit of an activity, and was difficult to distract. The interaction state categories are based on Parten (1932) and differentiate between six types of social play activities (see Table 1). Each child was observed on one typical preschool day (Coelho & Pinto, 2018).

2.6 Serbia

Preschool education for children from six months up to seven years of age is an integral part of the education system in Serbia and the national law does not provide special institutions for children with disabilities. They either attend the same groups as children without disabilities (with an individualized education plan) or so-called "development groups" inside regular preschools (Golubović et al., 2022). However, ECEC enrolment seems to be lower for children with disabilities than for children without disabilities and researchers describe a lack of instruments to assess the functioning of children with disabilities to identify support needs (Golubović et al., 2022).

Golubović et al. (2022) conducted a study on the engagement of children with and without developmental disabilities in daily routines in Serbian preschools. The authors defined engagement in relation to participation: They characterized involvement and engagement as two distinct subdomains of participation, with engagement being "expressed through the time the child spends engaged in activities, as well as the level of interaction with the social and physical environments" (Golubović et al., 2022, p. 1). To assess engagement, they used a questionnaire filled out by preschool teachers measuring three domains: engagement, independence, and social relationships (*Classroom Measure of Engagement, Independence, and Social Relationships* (ClaMEISR); McWilliam, 2014). It includes 215

items divided into 13 subscales that target different activities. On a three-point Likert scale, teachers rated how often a child exhibits a certain behavior (Golubović et al., 2022).

2.7 Sweden

In Sweden, preschools are available for all children aged one to five, with no separate early intervention services. The curriculum emphasizes that all children should receive necessary support within the general preschool setting (Luttropp & Granlund, 2010). In 2023, over 85% of children aged one to five attended preschool, including most children with intellectual disabilities (Luttropp & Granlund, 2010; Swedish National Agency for Education, 2024). The focus in Swedish preschools is on "educare", blending education and care, which is perceived as a key component for securing inclusion for children with disabilities (Luttropp & Granlund, 2010). Staff qualifications vary, with some having formal training as preschool teachers, while others are child minders or have no formal child care education (Coelho et al., 2021; Luttropp & Granlund, 2010).

Luttropp and Granlund (2010) compared the interaction behavior of children with and without intellectual disabilities in Swedish preschools. Several measures targeting different features of children's behavior were used to assess either participation or related constructs: Like Coelho and Pinto (2018), Luttropp and Granlund (2010) used the COP (Farran, 2014) to analyze children's level of involvement. In addition, they assessed their verbal communication behavior and interaction partners, proximity to other children and adults, and type of interaction. Child engagement was measured using a four-point rating scale filled out by teachers. Additional questionnaires focused on children's frequency of participating in different activities, teacher-child interactions, and peer interactions.

2.8 United States (U.S.)

In the United States (U.S.), children with disabilities often attend regular pre-kindergarten (Pre-K) settings, which in many cases have to serve a particular percentage of children with special educational needs. But still, there are specialized preschool programs and children in regular Pre-K classrooms tend to have milder types of disabilities, like speech and language delays (Nesbitt & Farran, 2022). In general, there is a wide variety of ECEC programs that differ by their source of funding (e.g., state-funded, for-profit organizations). Regulations for ECEC therefore vary between and within U.S. states due to separate departments of education and different requirements in individual school districts (Coelho et al., 2021). This may influence the assessment of children's development, professional development for teachers, or the curriculum. The majority of time in most Pre-K classrooms is spend inside and outdoor play does not occur often (Nesbitt & Farran, 2022).

Nesbitt and Farran (2022) analyzed the executive function skills and classroom behaviors of children with special needs in inclusive Pre-K classrooms. They measured children's level of involvement on a five-point scale from low to high using the COP (Farran, 2014). A distinctive feature was that involvement could only be coded as high if a child was engaged in a learning activity, which was defined as "basically any time the child was not unoccupied or disruptive or engaged in waiting for activities to begin" (Nesbitt & Farran, 2022, p. 4). In addition, children's participation in sequential learning behaviors (e.g., looking at a book, working on a puzzle) as well as social-learning interactions (working together with other children in a learning activity, including free play) were analyzed. Children were observed during all activities throughout an entire school day, except for outdoor recess, meals, and naptime (Nesbitt & Farran, 2022).

2.9 Summarizing analysis

The international studies we compared all analyzed the participation of children with disabilities in inclusive ECEC, revealing both similarities and differences. The focus ranged from classroom participation and behavior to developmental functioning, involvement, engagement, and interactions with peers and adults. One study focused on autistic children (Syrjämäki et al., 2023), while others included children with various disabilities or special educational needs, assessing different additional variables like independence or attention. All studies operationalized participation through involvement or engagement. Although authors referred to similar definitions (e.g., McWilliam & Bailey, 1992, 1995),

some framed them differently, such as distinguishing between involvement and engagement (Golubović et al., 2022) or using the constructs interchangeably (e.g., Coelho & Pinto, 2018; Nesbitt & Farran, 2022). When characterizing the local context, many authors describe the inclusion of children with disabilities as the norm (e.g., Coelho & Pinto, 2018; Kemp et al., 2013; Syrjämäki et al., 2023), though others highlight remaining segregated programs or insufficient support (e.g., Hu et al., 2016; Nesbitt & Farran, 2022). Further differences include adult/child ratio, staff qualifications, and daily activities (Coelho & Pinto, 2018; Hu et al., 2016; Luttropp & Granlund, 2010; Nesbitt & Farran, 2022).

Involvement or engagement was most often assessed through observations and the categorization of children's current behavior in types or levels. Two measurement tools were used by several studies, the ICER-R (Hu et al., 2016; Kemp et al., 2013) and the COP (Coelho & Pinto, 2018; Luttropp & Granlund, 2010; Nesbitt & Farran, 2022). Nonetheless, the studies described adaptations to fit the local context. For example, while Nesbitt and Farran (2022) only coded children's involvement as high when they were engaged in learning activities, Coelho and Pinto (2018) and Luttropp and Granlund (2010) did not apply this restriction. Hu et al. (2016) described certain behaviors that were coded as engaged due to features of the Chinese ECEC context, in addition to the regular coding manual of the ICER-R. While two studies used questionnaires in addition to observations (see Table 1), Golubović et al. (2022) only relied on a questionnaire to rate children's engagement. The assessment of the social context varied to a greater extent: Some studies explicitly coded the occurrence of interactions during observations (e.g., Hu et al., 2016; Kemp et al., 2013), while others categorized children's social orientation (Syrjämäki et al., 2023) or interaction state (Coelho & Pinto, 2018). Luttropp and Granlund (2010) focused on children's interactions in particular, which is reflected in them assessing children's verbal communication behavior, type of interaction, and interaction partners via observations as well as ratings of teacher-child and peer interactions via a questionnaire. On the contrary, Nesbitt and Farran (2022) did not assess interactions in a detailed manner, but rather observed children's participation in "social-learning interactions" (p. 4), i.e., to what extent children worked together with their peers. Finally, all studies analyzed participation in a variety of activities. For the most part, they chose similar activities, including unstructured (e.g., free play) as well as structured activities (e.g., circle time, whole-group teaching) and routines (e.g., meal time). But the studies differed in the level of detail provided when reporting on these activities. Table 1 gives an overview on how key components of participation in inclusive ECEC were analyzed in the included studies.

Table 1. *Analysis of participation in inclusive ECEC in the compared studies*

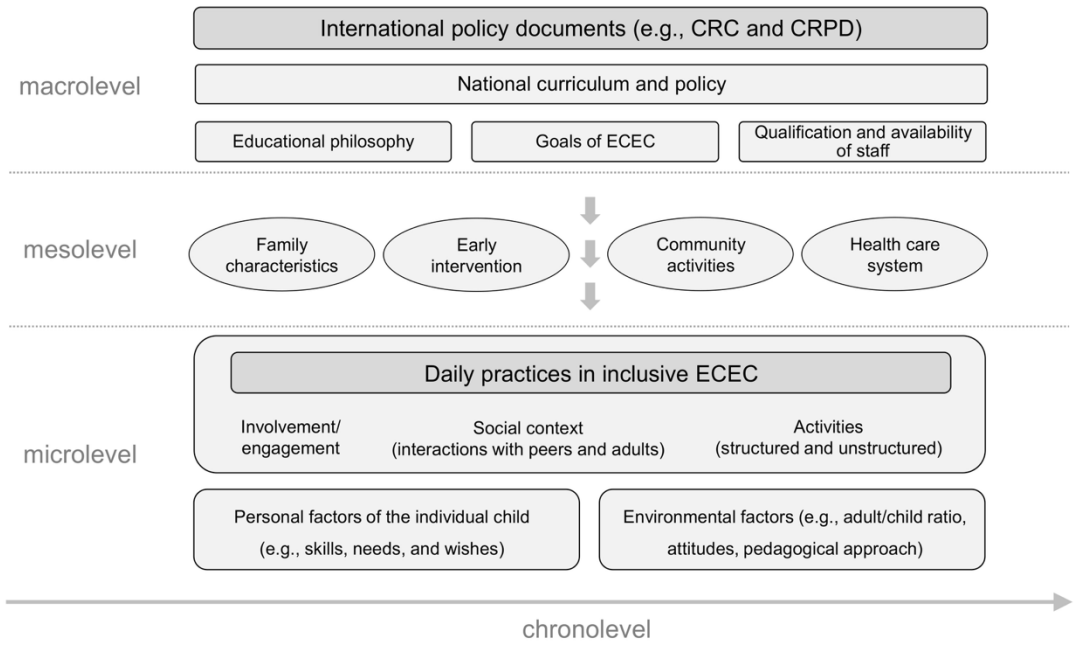
Country	Authors (year)	Methodology/ measure	Involvement/ engagement	Social context	Activities
Australia	Kemp et al. (2013)	observation/ ICER-R	four types of engagement	interactions with peers and adults	free play (indoor and outdoor), group activities (e.g., music), routine sessions
China	Hu et al. (2016)	observation/ ICER-R	four types of engagement	interactions with peers and adults	mealtime, transition, outdoor play, free play (learning center), whole-group teaching (e.g., math and science lessons)
Finland	Syrjämäki et al. (2023)	observation	five levels of involvement	social orientation (accommodative, participative, dominant, non-social, not defined social roles)	all activities during observation (breakfast, learning sessions, play, care, transitions and outdoors; not: rest and sleep sessions)
Portugal	Coelho & Pinto (2018)	questionnaire/ MAAP, observation/COP	five levels of involvement	interaction state (unoccupied, solitary play, onlooker, parallel play, associative play, cooperative play)	whole-group activities, free play, small-group activities, mealtime, transitions, playground
Serbia	Golubović et al. (2022)	questionnaire/ ClaMEISR	3-point rating scale of engagement	rating of social relationships	arrival, music, bathroom, outside time, hand-washing, teacher-directed activities, outside activities, meal/snack time, teacher-led small group activities, tooth-brushing, story-time, nap time, free play, departure
Sweden	Luttropp & Granlund (2010)	observation/COP, various questionnaires	five levels of involvement, 4-point rating scale of engagement	verbal communication, type of interaction, interaction partners, rating of teacher-child and peer interactions	circle time, free play, mealtime, outdoor activities
United States (U.S.)	Nesbitt & Farran (2022)	observation/COP	five levels of involvement	participation in social-learning interactions	entire school day (apart from outdoor recess, meals, and naptime)

Note. ICER-R = Individual Child Engagement Record-Revised (Kishida et al., 2008); COP = Child Observation in Preschool (Farran, 2014); ClaMEISR = Classroom Measure of Engagement, Independence, and Social Relationships (McWilliam, 2014); MAAP = Matrix of Assessment of Activities and Participation (Castro & Pinto, 2015)

3 Discussion

The participation of children with disabilities in inclusive ECEC must be viewed from multiple levels (Ullenhag et al., 2024): While children's behavior and daily practices are assessed at the microlevel, influences from the macro-, meso-, and exosystem also shape participation. It is essential to understand why studies measure participation in a certain way and how this affects their results, especially when comparing studies from different countries. The following section discusses our findings and explores how the identified similarities can help establish a common approach for assessing participation. To our knowledge, no such framework currently exists, despite growing international research. We focus on three key dimensions: (1) involvement and engagement, (2) the social context, and (3) ECEC activities. Figure 1 illustrates our conceptualization and the interrelations of influencing factors from a multi-level perspective.

Figure 1. *Conceptualization of participation in inclusive ECEC from a multi-level perspective*



Note. CRC = Convention on the Rights of the Child (UN, 1989); CRPD = Convention on the Rights of Persons with Disabilities (UN, 2006)

International frameworks emphasize that the mere attendance in inclusive ECEC does not guarantee full participation, but is a prerequisite for the essence of participation, i.e., involvement (Imms et al., 2017; WHO, 2001). Studies show that children with disabilities often participate and interact with others less than their peers (e.g., Hu et al., 2016; Kemp et al., 2013; Kuutti et al., 2022), but social integration is proposed as a key feature of participation (Eyssen et al., 2011; Whiteneck & Dijkers, 2009). Participation also varies by activity, with the engagement of children with disabilities being particularly low in unstructured activities (e.g., Golubović et al., 2022; Luttropp & Granlund, 2010). To fully understand participation, a range of situations in ECEC have to be considered, as they pose different challenges and opportunities for children (Rainey et al., 2014).

The international studies we compared all analyzed some kind of deep-level involvement or engagement, but used different methodological approaches (see Table 1), raising questions about the comparability of their criteria. Many participation tools were developed in the U.S. and may not align with other countries' contexts (Coelho et al., 2021). For example, the COP, developed in the U.S., was used in Portugal and Sweden, while the ICER-R, developed in Australia, was used in China. The authors

reported on some adaptations due to local differences, but uncertainties regarding the subjective interpretation and application of criteria remain. Objective behavior count measures might be particularly suitable for international comparative studies, as they offer concrete operational definitions that ensure reliability (Coelho et al., 2021). But despite presenting certain challenges, subjective ratings of involvement or engagement may be inevitable as contextually appropriate behavior varies across cultures (McWilliam & Bailey, 1992, 1995). Therefore, criteria should be adapted to local circumstances.

The importance attributed to participation's social context varied across the included studies. Luttropp and Granlund (2010), Hu et al. (2016), and Kemp et al. (2013) assessed children's interaction behavior in detail, while Nesbitt and Farran (2022) looked at broader social-learning interactions. Many studies may implicitly consider the social context when referring to McWilliam and Bailey's (1992, 1995) definition of engagement, as it includes interactions with peers and adults as an appropriate way of engaging. However, this definition allows for high engagement without the presence of social interactions, e.g., when a child is engaged in a solitary task. Our conceptualization emphasizes the importance of assessing interactions and social relationships for a more accurate measurement of participation. However, the studies we compared do not allow for clear cross-country comparisons of children's social integration as the level of assessment detail varies. Similarly, while most studies examined similar activities (e.g., free play and whole-group activities), differences in the structure, organization, and educational philosophy of countries may influence the actual implementation, therefore influencing children's behavior and participation.

In conclusion, a tension between the need for a standardized assessment on one side and necessary local adaptations to adequately measure the construct of participation on the other side becomes apparent (Ritoša et al., 2023). Based on this, we developed three guiding questions for comparing studies from different countries and considering an international perspective on children's participation in inclusive ECEC:

How do characteristics of the macrolevel (structure and organization of ECEC, national curriculum and policy, educational philosophy) influence the daily practices and activities on the microlevel?

National-level educational policy may seem distant from the daily ECEC practices at first glance, but can have a significant influence, for example in the emphasis on child agency versus teacher-led instruction. In Finland, children's development should be supported through everyday activities, while teacher-led activities play a larger role in the U.S. (Coelho et al., 2021; Kuutti et al., 2021). Whole-group activities are more common in Chinese kindergartens too, which can be challenging for children with disabilities (Hu et al., 2016). So, policy guidelines may influence the types of activities available and how children can participate in them. In addition, structural factors like adult/child ratio affect interaction quality, as teachers may lack the time to support individual children or resolve conflicts. Researchers should account for the time children spend in different activities and interacting with adults and peers. Additionally, differences within countries, especially at the subnational and regional level, are often overlooked but crucial, as ECEC is often more decentralized than other education levels (Guevara, 2022).

Is inclusion in ECEC the norm, what is understood as a disability, and what specific support do children with disabilities receive?

While in some countries it is normal for all children to attend inclusive ECEC (e.g., Sweden, Finland, Portugal; Luttropp & Granlund, 2010; Kuutti et al., 2022; Coelho & Pinto, 2018), there are other countries that still maintain special ECEC institutions for children with disabilities (e.g., China; Hu et al., 2016). In this case, children in inclusive ECEC tend to have milder disabilities (Nesbitt & Farran, 2022). This should be addressed in the study design, as coding criteria for involvement may need to be adjusted to accommodate the diverse skills and development of all children (Coelho et al., 2021). Additionally, early intervention or special support, as seen in Serbia and China (Golubović et al., 2022; Hu et al., 2016), may impact participation in inclusive ECEC. Such interventions can either enhance

participation by targeting specific developmental areas (e.g., language skills) or limit it if they reduce opportunities for peer interactions.

How can the key dimensions of a common participation understanding be incorporated and adapted to the assessment in a specific local context?

This paper highlights that studies from different countries, despite varying ECEC structures and policies, use a similar understanding and operationalization of participation. We conclude that an observation-based rating combining behavior counts (e.g., adult-child and peer interactions) with a rating of involvement or engagement is a suitable tool for measuring participation in inclusive ECEC. However, the criteria applied should be described in detail to allow for an unbiased interpretation of results. Ultimately, all children should have equal opportunities for participation in ways that suit their individual needs, skills, and wishes. While a common framework is beneficial, local adaptations are often necessary to adequately capture children's experiences. Our conceptualization aims to spark discussion about international research on the participation of children with disabilities in inclusive ECEC.

4 Conclusion

This paper was driven by the question: How can we conceptualize the participation of children with disabilities in inclusive ECEC while accounting for international differences? As highlighted by Ullenhag et al. (2024), participation is shaped by the dynamic interaction between individuals and their environment, encompassing social relationships, activities, and broader contextual factors. This underscores the importance of the local context – such as national and regional ECEC policies, structural frameworks, and educational values – in shaping how participation is both experienced and measured. Accordingly, any assessment of participation must be sensitive to both the specific aims of the research as well as the contextual conditions in which it is conducted.

As previously noted, our analysis focused exclusively on quantitative studies, so that our findings may not apply to qualitative research. Another limitation lies in the predominance of studies from the Global North, with publication dates ranging from 2010 to 2023 – a period during which policy changes may have occurred. These constraints reflect the scope of peer-reviewed articles identified based on our selection criteria. Furthermore, intra-country differences in ECEC systems and practices were not examined. Despite these limitations, the conceptualization developed here captures participation as a core outcome of inclusion and offers a foundation for its assessment in a way that allows for international comparisons. Employing established frameworks like the ICF (WHO, 2001) and the fPRC (Imms et al., 2017), while documenting adaptations to the local contexts, may enhance the validity and comparability of participation measures.

Ultimately, assessing participation in ECEC and fostering inclusive learning environments are important building blocks toward realizing the broader goal of full and equal participation for all children – especially in regions and countries where inclusive education has yet to become standard practice (Ullenhag et al., 2024). International comparisons of children's participation can illuminate common facilitators and barriers, thus informing global efforts to advance inclusion.

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