European Journal of Special Needs Education

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/rejs20

Participation, involvement and peer relationships in children with special educational needs in early childhood education

Tiina Kuutti, Nina Sajaniemi, Piia M. Björn, Nina Heiskanen & Jyrki Reunamo

To cite this article: Tiina Kuutti, Nina Sajaniemi, Piia M. Björn, Nina Heiskanen & Jyrki Reunamo (2022) Participation, involvement and peer relationships in children with special educational needs in early childhood education, European Journal of Special Needs Education, 37:4, 587-602, DOI: 10.1080/08856257.2021.1920214

To link to this article: https://doi.org/10.1080/08856257.2021.1920214

Published online: 25 Apr 2021.

EUROPEAN JOURNAL OF SPECIAL NEEDS EDUCATION
2022, VOL. 37, NO. 4, 587–602
https://doi.org/10.1080/08856257.2021.1920214

Routledge
Taylor & Francis Group

ARTICLE

OPEN ACCESS Check for updates

Participation, involvement and peer relationships in children with special educational needs in early childhood education

Tiina Kuutti[a], Nina Sajaniemi[a,b], Piia M. Björn[c,d], Nina Heiskanen[a] and Jyrki Reunamo[b]

[a]Philosophical Faculty, School of Applied Educational Science and Teacher Education, University of Eastern Finland, Joensuu, Finland; [b]Department of Education, University of Helsinki, Helsinki, Finland; [c]Faculty of Education, Department of Education, University of Turku, Turku, Finland; [d]Philosophical Faculty, School of Educational Sciences and Psychology, University of Eastern Finland

ABSTRACT

The aim of this study was to obtain new information about the diversity of everyday activities and social relations among children with special education needs (N = 145) in Finnish early childhood education and care (ECEC) units. In this research children´s daily activities, involvement, target of attention and social relations during play and other social activities in different groups formed according to children's special educational needs are investigated. Results revealed that children with problems in self-regulation and children with major disabilities spent less time with peers and in various social activities than children with developmental language disorder and children without special education needs. The results suggest that inclusive practices are still only under development within the Finnish ECEC units. Practical implications of the results concerning ways to support children's equal participation in daily activities in early childhood education and in building peer relationships, regardless of the amount of needed support are discussed.

ARTICLE HISTORY
Received 26 January 2021
Accepted 19 April 2021

KEYWORDS
Support in early childhood education; participation; involvement; peer relationship; early childhood education and care; inclusion

Introduction

Inclusion in early childhood education and care (ECEC) is currently a globally preferred policy. According to the Convention on the Rights of the Child, children have the right to active participation, care, protection and peer relationships, regardless of their need for special education (UN Convention on the Rights of the Child 1989, Article 23). High-quality inclusion in ECEC means that all children participate with involvement in various activities and social relations throughout the whole day (Buysse, Goldman, and Skinner 2002; Guralnik and Bruder 2016; Vakil et al. 2009). Involvement can be recognised by monitoring a child's concentration and persistence when participating in activities alone or together with adults or peers. Involvement is characterised by intrinsic motivation, fascination, openness to stimuli, and an intensity of experience at both the physical, social and cognitive level, and it has strong effect on children's learning (Laevers 2000; Pascal et al. 1998). High involvement is also an indicator of deep processing of the zone of proximal development (Vygotsky 1978).

CONTACT Tiina Kuutti tiina.kuutti@uef.fi

According to previous research, inclusion effects positively on children´s development, regardless of the need for support (Hollingsworth and Buysse 2009; Justice et al. 2014; Kwon, Elicker, and Kontos 2011; Rafferty, Piscitelli, and Boettcher 2003). Despite positive outcomes, some researches have highlighted that children with disabilities have difficulties in forming social relations and be involved (De Boer et al. 2013; Chen et al. 2019). ECEC professionals have an important role in supporting and developing effective practices that promote inclusion and support involvement in every child during various activities (Brodzeller et al. 2018; Mackenzie, Cologon, and Fenech 2016; Pelatti et al. 2016; Vakil et al. 2009). Additional research is needed for developing best practices that guarantee equal possibilities for participation and involvement to every child in inclusive settings.

Participation in children with SEN

Defining whether a child has special educational needs or not is usually not simple. Instead of defining special educational needs based on different kind of impairment the focus is moving towards teachers' views and professional judgements (Bruggink, Goei, and Koot 2013; Wilson 2002). In this research project special educational need (SEN) is defined as a need for more than regular support to attain set educational goals and further, SEN in this context refers to children who have diversity of needs caused by variety of restrictions in communication, peer relationships, group activities and concentration. In Finnish ECEC children with SEN are mainly mainstreamed in ECEC groups. A typical day in a Finnish ECEC centre consists of play, guided group activities and basic activities such as eating, sleeping and dressing. Children should have equal opportunities to participate in various activities with involvement throughout the day in their own group, regardless of possible individual, functional constraints (e.g. Coelho et al. 2019; Laevers and Declercq 2018; Vakil et al. 2009).

Being accepted as a fully member of a group regardless of any individual characteristics is experienced as a sense of belonging (Baumeister and Leary 1995; Hall 2009). It is centred on gaining acceptance, attention, and support from members of the group as well as providing the same attention to other members (La Guardia et al. 2000; Lambert et al. 2013). Peer relationships and having possibilities to participate are essential to every child (Chen et al. 2020, 2019; Foley et al. 2012; Moore-Dean, Renwick, and Schormans 2016). Social isolation is a serious risk for wellbeing, learning and development (e.g. Bennett 2014; Gerber and Wheeler 2009). Lack of approving relationships harms socio-emotional development and increases risks for behavioural problems (Baumeister and Leary 1995; Foley et al. 2012; Ladd and Troop-Gordon 2003; Sandseter and Seland 2018). Numerous studies have revealed that continuous peer neglect in childhood causes long-lasting social, cognitive and health-related problems (Copeland, Wolke, and Angold 2013; Du Plessis et al. 2019; Jarcho et al. 2019; Ladd et al. 2014: Will et al. 2016). Beyond any doubt, social relationships are the basis for well-being. In an optimal ECEC environment, professionals should recognise need of communicative and social support and scaffold every child when necessary (Syrjämäki, Pihlaja, and Sajaniemi 2018; Pursi and Lipponen 2018). Without adequate scaffolding, some children might be silently excluded from group.

For children peer relationships may be the most important part of the day in ECEC. Children themselves perceive peer relationships as a fundamental part of everyday life in

ECEC centres (Kyrönlampi-Kylmänen and Määttä 2012; Puroila, Estola, and Syrjälä 2012; Sandseter and Seland 2018; Thoilliez 2011). Peer relationships and the possibility to participate in meaningful actions is important to every child, regardless of possible physical, socio-emotional, verbal or cognitive dysfunctions (Chen et al. 2020, 2019; Foley et al. 2012; Moore-Dean, Renwick, and Schormans 2016). Children with special educational needs are known to be left outside in play situations in numerous studies (e.g. Hart-Barnett 2018; Papacek 2015; Wong and Kasari 2012). Children with compromised development have less possibilities for active participation and increased risk of social exclusion than typically developing children. (Chen et al. 2020; Hong et al. 2020; Ryalls et al. 2016; Suhonen et al. 2015).

Aims

In this work the aim was to untangle the diversity of everyday activities among children with or without special education needs (SEN) in Finnish ECEC centres. Participation in daily activities was investigated by paying attention to time spent in various activities and the level of involvement. Participation in social situations and peer relationships was considered through observing children's social relations and target of attention. Based on earlier research (Chen et al. 2020; Hart-Barnett 2018; Hong et al. 2020; Papacek 2015; Ryalls et al. 2016; Suhonen et al. 2015; Wong and Kasari 2012) it was hypothesised that SEN children spend less time in social activities with peers and that they are less involved. The following research questions were examined.

1) In which types of activities do the children with or without SEN participate?
2) What is the level of involvement of children with or without SEN?
3) What kinds of targets of attention do children with or without SEN have?
4) What kinds of social relations do children with or without SEN have?

Context of the current study

Finnish children have a subjective right to participate in early childhood education. Typically children start in ECEC at the age of two years (Finnish institute for health and welfare, 2020). At the age of six years, attendance in pre-primary education for one year before formal school is compulsory. Pre-primary education is typically organised in ECEC units. The importance of early childhood education is widely recognised, as research shows that high-quality ECEC promotes equality and lifelong learning (OECD 2017). According to the National core curriculum for early childhood education and care and for pre-primary education, the support in development and learning should be organised as a part of daily activities in ECEC groups (Finnish National Agency for Education 2014, 2018).

Methods

Participants

For this study, 1623 children in ECEC centres in southern and eastern Finland participated in observations of Progressive feedback which is a research project that includes

comparative research and learning-environment development based on the research results of ECEC. The sample included 13 cities, mainly situated in southern Finland. Altogether, 108 ECEC units were included in the observation. The units were mostly municipal units picked randomly from all the cities. The percentage of children with special needs in the different cities varied between 1.9 and 14.4%. The observer randomly picked the group and the names of five children in the group for observation, without seeing the children in question. The children with SEN had the same probability to be observed as anybody else. The observer was unaware of the children's SEN or non-SEN status. The ECEC professionals sent information about children's special needs on a separate web-form and it was later possible to separate children with and without special needs for the purposes of comparison.

A specialist in neuropsychology classified the SEN children according to the most prevalent difficulty. The classification was based on previous clinical evaluations and descriptions written by early education teachers. Four groups were formed: *self-regulation difficulties* (91 children), *language problems* (39 children) children with *severe disabilities* (15 children) and *no special education needs* (1 478 children).

The self-regulation difficulties group consisted of children who were described as having executive, attentional, emotional and/or social problems. Clinical evaluations were mainly related to impulsivity and hyperactivity. Self-regulation is a multidimensional concept (Veijalainen, Alijoki, and Reunamo 2017) and in this research self-regulation is defined according to Nigg (2017) as the capacity of a goal-directed behaviour to regulate actions, emotions, and cognitions. Children in the *language problems* group had problems in verbal communication and delays in language development or their language background was not Finnish. Children in the *severe disabilities* group had major developmental disorders or other diverse difficulties in multiple areas of health and development such as severe developmental disabilities. Children's age varied between 48 and 92 months (M= 67.5, SD = 11.13). In some cases the compulsory education may be extended if the child has a need for special education. Then pre-primary education may last two years in stead of one which explains that some of the children were almost eight years old. The participants in this study are described in Table 1.

Observation procedure

The data collection was conducted between January 2018 and May 2019, with no data collection in June, July, and August. Observations were performed by early education professionals who were trained for the observation, first with one-day training practicing the coding with videos including children's activities, then practicing the coding in the

Table 1. Observations in this study.

	Children with self-regulation difficulties n = 91	Children with language problems n = 39	Children with several disabilities n = 15	Children without SEN n = 1478
	%	%	%	%
Girls	22.3	45.1	16.1	48.7
Boys	77.7	54.9	83.9	51.3
Total	100	100	100	100

Note. Children's age varied between 48 and 92 months (M= 67.5, SD = 11.13).

observers' own groups and finally, after practice, in the second meeting the coding reliability was checked with coding videos. During the actual data collection, the observers did not observe their own groups.

The research observation took place in a random ECEC unit where the observer did not know the children or the educators. Each randomly chosen observer went to each unit for two days. Using systematic sampling, the observers picked each child for observation at four-minute intervals following a list that was repeated every 16 minutes. The observers used tablets for coding, and the observations were uploaded to the online server. If a child was missing, the next child on the list was chosen for observation. One observation session lasted four hours, either 8:00–12:00 or 12:00–16:00. The observation included all activities, for example, eating, teaching, play, care, and outdoors. Rest and sleep sessions were omitted from the analysis. The total number of observations was 34 789; *self-regulation difficulties* 1 872 observations, *language problems* 840 observations, *severe disabilities* 236 observations, and *no needs for special education* 31 841 observations. In the observation, there was no stratified sample, which means that the number of observation in different SEN categories describe the distribution of these children in the population.

The observed children were not aware that they were being observed. The observer did not seek contact with the children but answered their questions if necessary. The observer could move around as needed but he or she did not interfere with the normal activities. The staff was not informed of the exact days for observation, which means that the staff did not know the date during which the observer would arrive to avoid unconscious observer impact. However, it is possible that the actual presence of the observer has more impact than the knowledge of the day. The observation instrument was independent of other measures, the observers had no access to the evaluations written by class educators and they did not discuss them with the class educators.

Statistical analysis

In the preliminary study, it was found that the children with special needs were older than the other children in their group. To prevent age being an intermediated variable, 1-3-year-olds were omitted from the analysis. Data was analysed with SPSS 25. For the analysis, frequencies and cross-tabulation were used. To confirm statistical significance, the column proportions were checked with z-tests, adjusting *p*-values with the Bonferroni method. The level used for statistical significance was $p < .05$.

Measures

The observed items in this research included children's activities, involvement, children's target of attention, and social relations. Classifications in this instrument except for levels of involvement are based on research work in Progressive feedback project. Detailed information of these classifications is provided in Tables 2, 3, 4 and 5 Categories are mutually exclusive. To increase reliability, a handbook for observers has been written. In the book, every item is described, based on the reliability analysis of the most difficult items. The reliability is measured constantly with paired observations and continuing training is provided for the observers.

Table 2. Classification and descriptions of activities.

ACTIVITY	DESCRIPTION
General activity	Basic activities e.g. eating, dressing
Physical activity	e.g. running, swinging, jumping, climbing
Task or seatwork	e.g. pen and paper exercise
Role play	Building shared playworlds with other children, the child or the toy is having a role to play
Material play	The child is playing with toys or other materials, e.g. sandbox
No focus	No contact to others, walking around, waiting
Spending time with others with no other activity	E.g. chatting or/and walking with others
Rule play	e.g. board games, games with fixed rules, competition
Reading	The child listens or reads/looks books
Forbidden activity	E.g. not following orders, bullying, misbehaving, disturbing others
Other activity	Activity that does not fit in the other categories

Note. The reliability of the observation was checked with paired comparison. Nineteen pairs of observers were randomly chosen to make the same (random) observations without knowing each other's classifications, totalling 736 observations. The reliability of the paired observation (Cohen's kappa) was 66.7% (CI 62.9%, 70.5%).

Table 3. Levels of involvement.

LEVEL OF INVOLVEMENT (Laevers 1994)	DESCRIPTION
1	simple, stereotypic activity
2	frequently interrupted activity
3	Mainly continuous activity
4	Continuous activity with intense moments
5	Sustained intense activity

Note. The reliability of the paired observation (intraclass correlation coefficient, one-way random) for involvement was .756 (CI 719, 789, $p < .0005$).

Table 4. Classification and descriptions of the target of attention.

TARGET OF ATTENTION	DESCRIPTION
Non-social object	e.g. toys, sand, blocks, water or oneself
Adult	e.g. follows adult's narrative, discusses with adults, can include teaching material
Another child	Child's attention is focused on another child. The focus can include toys or other objects.
A group of children	Attention is focused on two or more children. The focus can include toys or other objects.
The whole situation	One object of attention can not be defined.

Note. The Kappa for target of attention was 54.7% (CI 54.2%, 55.2%, $p < .0005$).

Table 5. Classification and descriptions of social relations.

SOCIAL RELATION	DESCRIPTION
Accommodates	Child is adapting, accepts and acknowledges
Participates	Child is participating, interactive and cooperative
Dominates	Child is self-centred and insistent, pushy and dominant
Non-social or withdrawn	Child is withdrawn from the social situation, may be non-social and non-interactive
Other role	Other role that does not fit in the categories

Note. The Kappa for the social relations was 40.5% (CI 38.1%, 45.3%, $p < .0005$).

Ethics

The study was approved by Ethical Review Board in the Humanities and Social and Behavioural Sciences at the University of Helsinki. The participating municipalities agreed to allow the data to be collected for the research. The names or addresses of the units or groups (classes), where the children were observed, were not collected, securing the full anonymity. The children participating in the research had a signed consent from their

guardians. The approval of the children themselves was not collected, because it would have been difficult for children to understand the meaning and content of participating in the research. The research procedures did not affect the children's everyday activities. The children's names, birthdays, social security numbers, addresses were not collected. Personal information of the parents and teachers was not collected. Instead, each child and child group received a number that was used to merge the observation data and children's special needs. The data collection was conducted as part of the everyday activities. The observers' training emphasised respecting the children's own feelings and rights. For example, the observer was instructed not to initiate active contact with children, but if the child initiated contact, friendly and responsive reactions were discussed.

Results

First the results of four groups are presented separately in relation to research questions and thereafter a comparison between the four groups is provided.

Children with self-regulation difficulties

For children with self-regulation difficulties the most typical activities after general activities were physical activity, material play, task and no focus and high involvement was observed for 48.9% of the time. It was common to children with self-regulation difficulties to have a non-social object or an adult as a target of their attention. When social relations were observed it was noticed that they mostly participated or adapted.

Children with language problems

For children with language problems the most typical activities after general activities were physical activity, task, role play and material play and high involvement was observed for 50% of the time. They mostly had another child or a group of children as a target of their attention. When observing their role in the group it was noticed that they mostly participated or adapted.

Children with severe disabilities

Excluding general activities children with severe disabilities spent their time typically with material play, no focus, physical activity and task and high involvement was observed for 37,3% of the time. They had mostly an adult or non-social object as target of their attention. In group they mostly participated or adapted.

Children without SEN

For children without SEN the most common activities after general activities were physical activity, task, role play and material play and high involvement was observed for 52.9% of the time. They had more often another child or a group of children than an

adult or a non-social object as a target of their attention. In their group they mostly participated or adapted.

Comparison between groups

Observed activities

The differences in relative amounts of time spent in different activities are presented in Table 6. In comparison to children without SEN children with self-regulation difficulties spent statistically significantly more time in *physical activities*. They participated in *role play* statistically significantly less than children without SEN and *spent time others with no other activity like playing or tasks* statistically significantly less than children with language problems or children without SEN. *Forbidden action* was statistically significantly more common for children with self-regulation difficulties than for children with language problems or children without SEN.

Spending time with others with no other activity like playing or tasks was statistically significantly more often observed with children with language problems in comparison to all other children. Children with language problems played statistically significantly less *rule games* in comparison to children with self-regulation difficulties or children without SEN. Children with language problems took part statistically significantly less in *forbidden activities* in comparison to other children. It is noteworthy that children with language problems *attended reading sessions* statistically significantly less in comparison to children without SEN.

Children with severe disabilities spent statistically significantly less time with *role play* compared to other children. They had statistically significantly more *material play* than children without SEN. In addition, children with severe disabilities were statistically significantly more often observed to have *no focus* or contact with others than children without SEN. Children with severe disabilities participated in *forbidden activity* statistically significantly more often than children with language problems..

Table 6. Observed percentages of time children spent across all activities.

Type of activity	Children with self-regulation difficulties n = 91	Children with language problems n = 39	Children with severe disabilities n = 15	Children without SEN n = 1478	Total
	%	%	%	%	%
General activity	27.8_{a}	28.8_{a}	31.8_{a}	29.1_{a}	29.1
Physical activity	13.6_{a}	$13.7_{a.\ b}$	$11.4_{a.\ b}$	12.0_{b}	12.2
Task or seatwork	11.1_{a}	11.9_{a}	11.0_{a}	11.7_{a}	11.7
Role play	9.5_{a}	$11.5_{a.\ b}$	3.0_{c}	11.6_{b}	11.4
Material play	$12.3_{a.\ b}$	$11.5_{a.\ b}$	16.1_{b}	11.0_{a}	11.1
No focus	$9.2_{a.\ b.\ c}$	8.0_{c}	12.7_{b}	$8.2_{a.\ c}$	8.2
Spending time with others with no other activity	4.3_{a}	7.6_{b}	$2.5_{a.\ c}$	5.4_{c}	5.4
Rule play	4.9_{a}	3.1_{b}	$2.5_{a.\ b}$	4.9_{a}	4.9
Reading	$3.1_{a.\ b}$	1.8_{b}	$2.5_{a.\ b}$	3.3_{a}	3.2
Forbidden activity	2.5_{a}	0.4_{b}	$2.5_{a.\ c}$	1.3_{c}	1.4
Other activity	1.7_{a}	1.7_{a}	3.8_{b}	1.5_{a}	1.6
Total	100.0	100.0	100.0	100.0	100.0

Each subscript letter denotes a subset of the variable special need, the proportions of which do not differ significantly from each other at the .05 level.

Children without SEN participated in *role-play* statistically significantly more than children with self-regulation difficulties or children with severe disabilities. Children without SEN had statistically significantly less *physical activity*and fewer *forbidden activities*than children with self-regulation difficulties and less *material play*than children with severe disabilities.,

Involvement

The differences in relative amounts of time that children spent in high involvement are presented in Table 7. Children with self-regulation difficulties were observed to have statistically significantly *lower* compared to children without SEN. Children with language problems were observed to have high involvement for 50% of the time which did not differ statistically significantly compared to children with self-regulation difficulties or children without SEN. Children with severe disabilities had statistically significantly lowest involvement compared to other children whereas children without SEN had statistically significantly higher involvement compared to children with self-regulation difficulties or children with severe disabilities.other children.

Table 7. Observed percentages of children's high involvement.

	Children with self-regulation difficulties n = 91	Children with language problems n = 39	Children with severe disabilities n = 15	Children without SEN n = 1478
	%	%	%	%
High involvement	48.9_{a}	$50.0_{a,\ b}$	$37.3_{\ c}$	52.9_{b}

Each subscript letter denotes a subset of the variable special need, the proportions of which do not differ significantly from each other at the .05 level.

Table 8. Observed percentages of children's target of attention.

Target of attention	Children with self-regulation difficulties n = 91	Children with language problems n = 39	Children with severe disabilities n = 15	Children without SEN n = 1478	Total
	%	%	%	%	%
Non-social object	$22.2_{a,\ b}$	$18.9_{b,\ c}$	25.0_{a}	$17.7_{\ c}$	18.0
Adult	18.3_{a}	$16.3_{a,\ b}$	$36.9_{\ c}$	15.2_{b}	15.5
Another child	16.2_{a}	20.7_{b}	$7.6_{\ c}$	20.0_{b}	19.7
A group of children	17.7_{a}	19.2_{a}	10.6_{b}	$22.8_{\ c}$	22.4
The whole situation	25.6_{a}	24.9_{a}	19.9_{a}	24.4_{a}	24.4
Total	100.0	100.0	100.0	100.0	100.0

Each subscript letter denotes a subset of the variable special need, the proportions of which do not differ significantly from each other at the .05 level.

Table 9. Observed percentages of time children spent in different social relations in groups.

Description of social relation in group	Children with self-regulation difficulties n = 91	Children with language problems n = 39	Children with severe disabilities n = 15	Children without SEN n = 1478	Total
	%	%	%	%	%
Accommodates	29.4_{a}	$32.7_{a.\ b}$	$31.8_{a.\ b}$	31.9_{b}	31.7
Participates	45.1_{a}	52.4_{b}	36.9_{c}	49.0_{b}	48.8
Dominates	8.2_{a}	3.0_{b}	$6.4_{a.\ c}$	4.9_{c}	5.1
Non-social or withdrawn	14.5_{a}	11.0_{b}	17.4_{a}	11.9_{b}	12.1
Other role	2.9_{a}	1.0_{b}	7.6_{c}	2.3_{a}	2.3
Total	100.0	100.0	100.0	100.0	100.0

Each subscript letter denotes a subset of the variable special need, the proportions of which do not differ significantly from each other at the .05 level.

Target of attention

Table 8 presents the differences in relative time in targeted attention. Children with language problems and children without SEN had *another child* as a target of their attention more often than children with self-regulation difficulties or severe disabilities. By contrast, children with self-regulation difficulties had *an adult* as a target of attention statistically significantly more often than children without SEN. Children with severe disabilities had another child or a group of children as their target of attention statistically significantly less frequently and an adult statistically significantly more often compared to other children. Children without SEN had *a group of children* as their target of attention significantly more often than other children.

Social relations

The differences in relative amounts of time spent in different social relations are presented in Table 9. Children with self-regulation difficulties dominated and had a non-social role statistically significantly more often than children with language problems or children without SEN. Children with language problems dominated statistically significantly less than all the other children. Children with severe disabilities were non-social or withdrawed statistically significantly more often compared to children with language problems or children without SEN.

Discussion

Our study revealed that much more attention should be paid to supporting participation especially in children with self-regulation difficulties and severe disabilities. According to the results it seems that they participate in social activities less than their peers. Instead they spent their time with material play, tasks or with no focus. In order to take advantage of the benefits of inclusive environment all children should participate equally, regardless of their disabilities (Barton and Smith 2015; Buysse, Goldman, and Skinner 2002; Guralnik and Bruder 2016). Additionally, children with severe disabilities had the lowest involvement. It is essential that the level of involvement and the zone of proximal development is taken into account in order to support learning new skills in an effective way. It is

noteworthy that among children with self-regulation difficulties or severe disabilities, the target of attention was usually an adult rather than other children. This might indicate that children are adjusted to interacting with adults instead of playing and interacting with peers. It is also possible that they rely on adults first when beginning to interact with peers.

Children with language problems were participating in different kinds of activities throughout the day quite equally and they were engaging in social relations with their peers. It is noteworthy that children with language problems attended reading sessions statistically significantly less than children without SEN. This is an alarming result, since reading would be essential for supporting the development of language skills.

Another noteworthy result is that spending time with no focus was relatively common for all children. It is important that ECEC professionals plan the schedule and activities of the day carefully to confirm children's involvement and engagement. Effective classroom management supports not only children's involvement and engagement but also behaviour management and reduces misbehaviour (Emmer and Stough 2001; Vitiello et al. 2012).

In our research the most common reason why children had a need for support in ECEC was difficulties related to self-regulation. Effective self-regulation is fundamental to an individual's functioning and early childhood is an important period for the development of self-regulation (Becker et al. 2014; Montroy et al. 2016; Whitebread and Basilio 2012). Professionals working in ECEC are responsible of supporting children in situations in which self-regulation skills are needed. Our results were in line with studies indicating that children with low SR-skills are at increased risk of being left outside joint play (Braza et al. 2007; Li, Hestenes, and Wang 2016). This result is worrying because joint play supports the development of SR-skills while solitary play does not have that effect (Elias and Berk 2002; Vieillevoye and Nader-Grosbois 2008). This means that the very children who need to practice their SR-skills are missing a potential opportunity to do that. Children prefer prosocial peers and neglect antisocial peers (Hamlin and Wynn 2011), which makes establishing friendships even more difficult if the child already has difficulties in forming peer relationships and does not have the skills to act in situations that require social skills. Being left outside causes negative feelings towards peers and negative feelings may cause antisocial behaviour or vice versa. This may cause a vicious circle that is difficult to break. Therefore, early intervention is essential.

In future research it will be important to draw attention to effective ways to increase participation and engagement of all children, despite the level of support they need. By observing the strategies used by professionals in ECEC in varying situations in early childhood settings, it is possible to obtain knowledge of effective methods and practices. Additionally, more research is needed to acquire knowledge of the role of professionals working in the group, especially considering their verbal and non-verbal interaction. It is important to become aware of gestures and facial expressions that may in the worst scenario cause exclusion of children.

Limitations

There are some limitations of this study that must be considered when interpreting the results. First, the group of children with severe disabilities was relatively small. Because of that it is unreliable to make wide-reaching conclusions based on the results of our research. At the same time, we should not underestimate the significance of the results

of these observations. Being approved by peers and feeling valued is crucial for children's well-being, and no child should feel rejected or left outside.

Another matter that must be remembered when interpreting the results is that differences between groups are volatile. Groups are formed based on the descriptions and the diagnoses written in the questionnaire. The descriptions written by the professionals in the ECEC group were subjective and related to the situations observed at that time. Despite these limitations, they provide important knowledge about children and their status in groups. These descriptions also provide important information about the support that children currently need in ECEC environments.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributors

Tiina Kuutti is a Master of Education and a doctoral student at the University of Eastern Finland. Her research focuses into participation and peer relationships of children who have special educational needs in early childhood education.

Nina Sajaniemi is a Professor of Early Education at the Applied Educational Science and Teacher Education at University of Eastern Finland in Joensuu. In addition, she is a principal investigator at University of Helsinki. Further, she is an experienced clinician (neuropsychology) in neurodevelopmental and educational fields. Professor Sajaniemi is experienced in multidisciplinary research focusing on well-being, learning and effects of pedagogical interventions. She has gained valuable knowledge on both preschool and school settings in promoting health and well-being. She is interested in complexity of development where biological, social, psychological and cultural aspects are closely intertwined. She runs multidisciplinary research focusing on early prevention of social exclusion and stress-related problems in learning and wellbeing especially in early education environments.

Professor Piia Björn is an expert in special education. Her research focuses into learning difficulties, intervention research, comparative research on support frameworks and teacher's work.

Nina Heiskanen is a Master of Education and a University Teacher in School of Applied Education Science and Teacher Education in University of Eastern Finland. Nina is interested in early childhood pedagogy, learning and well-being.

Jyrki Reunamo is a PhD, Principal Investigator, adjunct professor, and university lecturer at the University of Helsinki, Finland. He is the founder of early education research and development project Progressive Feedback (https://blogs.helsinki.fi/orientate/), which focuses on research-based quality improvement. Reunamo's research interests include evaluation, research methods, comparative research, and learning environment.

ORCID

Tiina Kuutti http://orcid.org/0000-0003-0776-7004
Nina Sajaniemi http://orcid.org/0000-0002-5959-7572
Piia M. Björn http://orcid.org/0000-0002-0725-480X
Jyrki Reunamo http://orcid.org/0000-0002-4605-8000

References

Barton, E. E., and B. J. Smith. 2015. "Advancing High-Quality Preschool Inclusion: A Discussion and Recommendations for the Field." *Topics in Early Childhood Special Education* 35 (2): 69–78. doi:10.1177/0271121415583048.

Baumeister, R. F., and M. R. Leary. 1995. "The Need to Belong: Desire for Interpersonal Attachments as a Fundamental Human Motivation." *Psychological Bulletin* 117 (3): 497–529. doi:10.1037/0033-2909.117.3.497.

Becker, D. R., A. Miao, R. Duncan, and M. M. McClelland. 2014. "Behavioral Self-Regulation and Executive Function Both Predict Visuomotor Skills and Early Academic Achievement." *Early Childhood Research Quarterly* 29 (4): 411–424. doi:10.1016/j.ecresq.2014.04.014.

Bennett, M. 2014. "Intergroup Social Exclusion in Childhood: Forms, Norms, Context, and Social Identity." *Journal of Social Issues* 70 (1): 183–195. doi:10.1111/josi.12054.

Braza, F., P. Braza, M. R. Carreras, J. M. Muñoz, J. R. Sánchez-Martín, A. Azurmendi, A. Sorozabal, A. García, and J. Cardas. 2007. "Behavioral Profiles of Different Types of Social Status in Preschool Children: An Observational Approach." *Social Behavior and Personality* 35 (2): 195–212. doi:10.2224/sbp.2007.35.2.195.

Brodzeller, K. L., J. R. Ottley, J. Jung, and C. G. Coogle. 2018. "Interventions and Adaptations for Children With Autism Spectrum Disorder in Inclusive Early Childhood Settings." *Early Childhood Education Journal* 46 (3): 277–286. doi:10.1007/s10643-017-0859-5.

Bruggink, M., S. L. Goei, and H. M. Koot. 2013. "Characteristics of Teacher-Identified Students with Special Educational Needs in Dutch Mainstream Primary Education." *Educational Research* 55 (4): 361–375. doi:10.1080/00131881.2013.844938.

Buysse, V., B. D. Goldman, and M. L. Skinner. 2002. "Setting Effects on Friendship Formation among Young Children with and without Disabilities." *Exceptional Children* 68 (4): 503–517. doi:10.1177/001440290206800406.

Chen, J., L. M. Justice, A. Rhoad-Drogalis, T.-J. Lin, and B. Sawyer. 2020. "Social Networks of Children with Developmental Language Disorder in Inclusive Preschool Programs." *Child Development* 91 (2): 471–487. doi:10.1111/cdev.13183.

Chen, J., T.-J. Lin, L. Justice, and B. Sawyer. 2019. "The Social Networks of Children with and without Disabilities in Early Childhood Special Education Classrooms." *Journal of Autism and Developmental Disorders* 49 (7): 2779–2794. doi:10.1007/s10803-017-3272-4.

Coelho, V., J. Cadima, A. I. Pinto, and C. Guimarães. 2019. "Self-Regulation, Engagement, and Developmental Functioning in Preschool-Aged Children." *Journal of Early Intervention* 41 (2): 105–124. doi:10.1177/1053815118810238.

Copeland, W. E., D. Wolke, A. Angold, and E. J. Costello. 2013. "Adult Psychiatric Outcomes of Bullying and Being Bullied by Peers in Childhood and Adolescence." *JAMA Psychiatry* 70 (4): 419–426. doi:10.1001/jamapsychiatry.2013.504.

De Boer, A., S. J. Pijl, W. Post, and A. Minnaert. 2013. "Peer Acceptance and Friendships of Students with Disabilities in General Education: The Role of Child, Peer, and Classroom Variables." *Social Development* 22 (4): 831–844. doi:10.1111/j.1467-9507.2012.00670.x.

Du Plessis, M. R., S. Smeekens, A. H. N. Cillessen, S. Whittle, and B. Güroğlu. 2019. "Bullying the Brain? Longitudinal Links between Childhood Peer Victimization, Cortisol, and Adolescent Brain Structure." *Frontiers in Psychology* 9: 1–9. doi:10.3389/fpsyg.2018.02706.

Elias, C. L., and L. E. Berk. 2002. "Self-Regulation in Young Children: Is There a Role for Sociodramatic Play?" *Early Childhood Research Quarterly* 17 (2): 216–238. doi:10.1016/S0885-2006(02)00146-1.

Emmer, E. T., and L. M. Stough. 2001. "Classroom Management: A Critical Part of Educational Psychology, with Implications for Teacher Education." *Educational Psychologist* 36 (2): 103–112. doi:10.1207/S15326985EP3602_5.

Finnish institute of health and welfare. 2020. "Varhaiskasvatus 2019. [Early Childhood Education 2019.]"https://www.julkari.fi/bitstream/handle/10024/140541/Tr33_20.pdf?sequence=5&isAllowed=y

Finnish National Agency for Education. 2014. "Esiopetuksen Opetussuunnitelman Perusteet. [National Core Curriculum for Pre-Primary Education.]." *Regulations and Guidelines* 2016: 1. https://www.oph.fi/sites/default/files/documents/esiopetuksen_opetussuunnitelman_perusteet_2014.pdf

Finnish National Agency for Education. 2018. "Varhaiskasvatussuunnitelman Perusteet. [National Core Curriculum for Early Childhood Education and Care.]." *Regulations and Guidelines* 2018: 3a. https://www.oph.fi/sites/default/files/documents/varhaiskasvatussuunnitelman_perusteet.pdf

Foley, K. R., A. M. Blackmore, S. Girdler, M. O'Donnell, R. Glauert, G. Llewellyn, and H. Leonard. 2012. "To Feel Belonged: The Voices of Children and Youth with Disabilities on the Meaning of Wellbeing." *Child Indicators Research* 5 (2): 375–391. doi:10.1007/s12187-011-9134-2.

Gerber, J., and L. Wheeler. 2009. "On Being Rejected: A Meta-Analysis of Experimental Research on Rejection." *Perspectives on Psychological Science* 4 (5): 468–488. doi:10.1111/j.1745-6924.2009.01158.x.

Guralnik, M. J., and B. B. Bruder. 2016. "Early Childhood Inclusion in the United States." *Infants and Young Children* 29 (3): 166–177. doi:10.1097/IYC.0000000000000071.

Hall, S. A. 2009. "The Social Inclusion of Young Adults with Intellectual Disabilities: A Phenomenology of Their Experiences." *Journal of Ethnographic and Qualitative Research* 4: 24–40

Hamlin, J. K., and K. Wynn. 2011. "Young Infants Prefer Prosocial to Antisocial Others." *Cognitive Development* 26 (1): 30–39. doi:10.1016/j.cogdev.2010.09.001.

Hart-Barnett, J. 2018. "Three Evidence-Based Strategies that Support Social Skills and Play among Young Children with Autism Spectrum Disorders." *Early Childhood Education Journal* 46 (6): 665–672. doi:10.1007/s10643-018-0911-0.

Hollingsworth, H. L., and V. Buysse. 2009. "Establishing Friendships in Early Childhood Inclusive Settings? What Roles Do Parents and Teachers Play?" *Journal of Early Intervention* 31 (4): 287–307. doi:10.1177/1053815109352659.

Hong, S. Y., J. Eum, Y. Long, C. Wu, and G. Welch. 2020. "Typically Developing Preschoolers' Behavior toward Peers with Disabilities in Inclusive Classroom Context." *Journal of Early Intervention* 42 (1): 49–68. doi:10.1177/1053815119873071.

Jarcho, J. M., H. Y. Grossman, A. E. Guyer, M. Quarmley, A. R. Smith, N. A. Fox, E. Leibenluft, D. S. Pine, and E. E. Nelson. 2019. "Connecting Childhood Wariness to Adolescent Social Anxiety through the Brain and Peer Experiences." *Journal of Abnormal Child Psychology* 47 (7): 1153–1164. doi:10.1007/s10802-019-00543-4.

Justice, L. M., J. A. R. Logan, T.-J. Lin, and J. N. Kaderavek. 2014. "Peer Effects in Early Childhood Education: Testing the Assumptions of Special-Education Inclusion." *Psychological Science* 25 (9): 1722–1729. doi:10.1177/0956797614538978.

Kwon, K.-A., J. Elicker, and S. Kontos. 2011. "Social IEP Objectives, Teacher Talk, and Peer Interaction in Inclusive and Segregated Preschool Settings." *Early Childhood Education Journal* 39 (4): 267–277. doi:10.1007/s10643-011-0469-6.

Kyrönlampi- Kylmänen, T., and K. Määttä. 2012. "What Do the Children Really Think about a Day-Care Centre – The 5–7-year-old Finnish Children Speak Out." *Early Child Development and Care* 182 (5): 505–520. doi:10.1080/03004430.2011.557861.

La Guardia, J. G., R. M. Ryan, C. E. Couchman, and E. L. Deci. 2000. "Within-Person Variation in Security of Attachment: A Self-Determination Theory Perspective on Attachment, Need Fulfillment, and Well-Being." *Journal of Personality and Social Psychology* 79 (3): 367–384. doi:10.1037//0022-3514.79.3.367.

Ladd, G. W., I. Ettekal, B. Kochenderfer-Ladd, K. D. Rudolph, and R. K. Andrews. 2014. "Relations among Chronic Peer Group Rejection, Maladaptive Behavioral Dispositions, and Early Adolescents' Peer Perceptions." *Child Development* 85 (3): 971–988. doi:10.1111/cdev.12214.

Ladd, G. W., and W. Troop-Gordon. 2003. "The Role of Chronic Peer Difficulties in the Development of Children's Psychological Adjustment Problems." *Child Development* 74 (5): 1344–1367. doi:10.1111/1467-8624.00611.

Laevers, F. 1994. *The Leuven Involvement Scale for Young Children LIS-YC Manual*. Leuven, Belgium: Centre for Experiential Education.

Laevers, F. 2000. "Forward to Basics! Deep-Level-Learning and the Experiential Approach." *Early Years* 20 (2): 20–29. doi:10.1080/0957514000200203.

Laevers, F., and B. Declercq. 2018. "How Well-Being and Involvement Fit into the Commitment to Children's Rights." *European Journal of Education* 53 (3): 325–335. doi:10.1111/ejed.12286.

Lambert, N. M., T. F. Stillman, J. A. Hicks, S. Kamble, R. F. Baumeister, and F. D. Fincham. 2013. "To Belong Is to Matter: Sense of Belonging Enhances Meaning in Life." *Personality & Social Psychology Bulletin* 39 (11): 1418–1427. doi:10.1177/0146167213499186.

Li, J., L. L. Hestenes, and Y. C. Wang. 2016. "Links between Preschool Children's Social Skills and Observed Pretend Play in Outdoor Childcare Environments." *Early Childhood Education Journal* 44 (1): 61–68. doi:10.1007/s10643-014-0673-2.

Mackenzie, M., K. Cologon, and M. Fenech. 2016. "'Embracing Everybody': Approaching the Inclusive Early Childhood Education of a Child Labelled with Autism from a Social Relational Understanding of Disability." *Australasian Journal Early Childhood* 41 (2): 4–12. doi:10.1177/183693911604100202.

Montroy, J. J., R. P. Bowles, L. E. Skibbe, M. M. McClelland, and F. J. Morrison. 2016. "The Development of Self-Regulation across Early Childhood." *Development Psychology* 52 (11): 1744–1762. doi:10.1037/dev0000159.

Moore-Dean, A., R. Renwick, and A. F. Schormans. 2016. "Friendships Characteristics of Children with Intellectual/Developmental Disabilities: Qualitative Evidence from Video Data." *Journal of Developmental Disabilities* 22 (1): 39–51. https://oadd.org/wp-content/uploads/2016/12/41022_JoDD_22-1_v10f_39-51_Moore-Dean_et_al.pdf

Nigg, J. T. 2017. "Annual Research Review: On the Relations among Self-Regulation, Self-Control, Executive Functioning, Effortful Control, Cognitive Control, Impulsivity, Risk-Taking, and Inhibition for Developmental Psychopathology." *Journal of Child Psychology and Psychiatry* 58 (4): 361–383. doi:10.1111/jcpp.12675.

Papacek, A. M. 2015. "The Role of Peer Guided Play for Children with Autism Spectrum Disorder." *JAASEP Winter* 80–97. https://files.eric.ed.gov/fulltext/EJ1134213.pdf

Pascal, C., T. Bertram, C. Mould, and R. Hall. 1998. "Exploring the Relationship between Process and Outcome in Young Children's Learning: Stage One of a Longitudinal Study." *International Journal of Educational Research* 29 (1): 51–67. doi:10.1016/S0278-4343(98)00013-5.

Pelatti, C. Y., J. M. Dynia, J. A. R. Logan, L. M. Justice, and J. Kaderavek. 2016. "Examining Quality in Two Preschool Settings: Publicly Funded Early Childhood Education and Inclusive Early Childhood Education Classrooms." *Child & Youth Care Forum* 45 (6): 829–849. doi:10.1007/s10566-016-9359-9.

Puroila, A.-M., E. Estola, and L. Syrjälä. 2012. "Having, Loving, and Being: Children's Narrated Well-Being in Finnish Day Care Centers." *Early Childhood Development and Care* 182 (3–4): 345–362. doi:10.1080/03004430.2011.646726.

Pursi, A., and L. Lipponen. 2018. "Constituting Play Connection with Very Young Children: Adults' Active Participation in Play." *Learning, Culture and Social Interaction* 17: 21–37. doi:10.1016/j.lcsi.2017.12.001.

Rafferty, Y., V. Piscitelli, and C. Boettcher. 2003. "The Impact of Inclusion on Language Development and Social Competence among Preschoolers with Disabilities." *Exceptional Children* 69 (4): 467–479. doi:10.1177/001440290306900405.

Ryalls, B. O., R. Harbourne, L. Kelly-Vance, J. Wickstrom, N. Stergiou, and A. Kyvelidou. 2016. "A Perceptual Motor Intervention Improves Play Behavior in Children with Moderate to Severe Cerebral Palsy." *Frontiers in Psychology* 7: 1–10. doi:10.3389/fpsyg.2016.00643.

Sandseter, E., . B., . H., and M. Seland. 2018. "4 – 6 Year-old Children's Experience of Subjective Well-Being and Social Relations in ECEC Institutions." *Child Indicators Research* 11 (5): 1585–1601. doi:10.1007/s12187-017-9504-5.

Suhonen, E., M. A. Nislin, A. Alijoki, and N. K. Sajaniemi. 2015. "Children's Play Behavior and Social Communication in Integrated Special Day-Care Groups." *European Journal of Special Needs Education* 30 (3): 287–303. doi:10.1080/08856257.2015.1009707.

Syrjämäki, M., P. Pihlaja, and N. Sajaniemi. 2018. "Enhancing Peer Interaction during Guided Play in Finnish Integrated Special Groups." *European Early Childhood Education Research Journal* 26 (3): 418–431. doi:10.1080/1350293X.2018.1463908.

The organization for Economic Co-operation and Development. 2017. *Starting Strong 2017: Key OECD Indicators on Early Childhood Education and Care, Starting Strong*. Paris: OECD. https://read.oecd-ilibrary.org/education/starting-strong-2017_9789264276116-en#page12

Thoilliez, B. 2011. "How to Grow up Happy: An Exploratory Study on the Meaning of Happiness from Children's Voices." *Child Indicators Research* 4 (2): 323–351. doi:10.1007/s12187-011-9107-5.

United Nations Office of the High Commissioner. 1989. *Convention on the Rights of the Child*. https://www.ohchr.org/en/professionalinterest/pages/crc.aspx

Vakil, S., E. Welton, S. O´Connor, and L. S. Kline. 2009. "Inclusion Means Everyone! The Role of the Early Childhood Educator When Including Young Children with Autism in the Classroom." *Early Childhood Education Journal* 36 (4): 321–326. doi:10.1007/s10643-008-0289-5.

Veijalainen, J., J. Reunamo, and A. Alijoki. 2017. "Children's Self-Regulation Skills in the Finnish Day Care Environment." *Journal of Early Childhood Education Research* 6 (1): 89–107. http://hdl.handle.net/10138/218282

Vieillevoye, S., and N. Nader-Grosbois. 2008. "Self-Regulation during Pretended Play in Children with Intellectual Disability and in Normally Developing Children." *Research in Develop-mental Disabilities* 29 (3): 256–272. doi:10.1016/j.ridd.2007.05.003.

Vitiello, V. E., L. M. Booren, J. T. Downer, and A. P. Williford. 2012. "Variation in Children's Classroom Engagement Throughout a Day in Preschool: Relations to Classroom and Child Factors." *Early Childhood Research Quarterly* 27 (2): 210–220. doi:10.1016/j.ecresq.2011.08.005.

Vygotsky, L. S. 1978. *Mind in Society. The Development of Higher Psychological Processes*. Cambridge, MA: Harvard University Press.

Whitebread, D., and M. Basilio. 2012. "The Emergence and Early Development of Self-Regulation in Young Children." *Profesorado, Revista de currículum y formacíon del profesorado* 16 (1): 15–34. https://www.ugr.es/~recfpro/rev161ART2en.pdf

Will, G.-J., P. A. C. Van Lier, E. A. Crone, and B. Güroğlu. 2016. "Chronic Childhood Peer Rejection Is Associated with Heightened Neural Responses to Social Exclusion during Adolescence." *The Journal of Abnormal Child Psychology* 44 (1): 43–55. doi:10.1007/s10802-015-9983-0.

Wilson, J. 2002. "Defining 'Special Needs'." *European Journal of Special Needs Education* 17 (1): 61–66. doi:10.1080/08856250110099024.

Wong, C., and C. Kasari. 2012. "Play and Joint Attention of Children with Autism in the Preschool Special Education Classroom." *Journal of Autism and Developmental Disorders* 42 (10): 2152–2161. doi:10.1007/s10803-012-1467-2.