Journal of Early Childhood Education Research
Volume 11, Issue 1, 2022, 297–312

jecer.

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Children's social orientations as creative processes in early childhood education and care

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ABSTRACT: The purpose of this article is to study children's social orientations as creative processes in early childhood education and care (ECEC). In this article, we focus on how children's creative thinking abilities relate to children's social orientations in interactive situations in ECEC. We study children's creative thinking abilities with the Thinking Creatively in Action and Movement [TCAM] -test and children's social orientations with the Child observation instrument of Reunamo (2007). Two hundred and eighty children in 23 ECEC institutions participated in the research. There were altogether eight randomly selected days for the observation between January and May 2015. The TCAM-test was conducted by teachers for their own group. The connections between the TCAM-test and the Child observation instrument were studied with partial correlations controlling children's age. The results showed that children's creative thinking abilities were associated positively with participative social orientation. An adaptive and withdrawn orientation had negative correlations with creative thinking abilities.

Keywords: *creativity, creative thinking abilities, participation, social orientations*

Introduction

Creativity is a concept, which is considered necessary for the future of humankind (National Advisory Committee on Creative and Cultural Education [NACCCE], 1999;

 ISSN 2323-7414; ISSN-L 2323-7414 online. Early Childhood Education Association Finland.

Wojciehowski & Ernst, 2018). Adapting to changing circumstances is inevitable for surviving on this planet (Ershadi & Winner, 2020; Vygotsky, 2004). Thus, enhancing the creative potential of children is important not just for the meaningful life of individuals, but for the whole society (Glăveanu et al., 2020). However, creativity has been a difficult concept to define and the research on creativity has included different approaches. For example, frameworks such as the four P's, that is: person, process, product, and press (the environment), have provided a foundation for the research on creativity (Rhodes, 1961). In early childhood education and care (ECEC), emphasis on studying creativity has been on play and arts and skills (Finnish National Agency for Education [EDUFI], 2018; NACCCE, 1999). Children's participation in social interaction situations has been studied very little as a creative process in ECEC (Laevers, 1994; Nikkola et al., 2020; Reunamo et al., 2014). However, children's ability to act creatively in social interaction situations should be an important goal of ECEC. It can be considered as a prerequisite for the participation, learning and building of a shared culture of ECEC (EDUFI, 2018).

In this article, we study how children's creative thinking abilities relate to children's social orientations (Figure 1). Children's participative orientation can be considered as predicting possibilities to participate in the shared creation of the culture in interaction situations in ECEC.

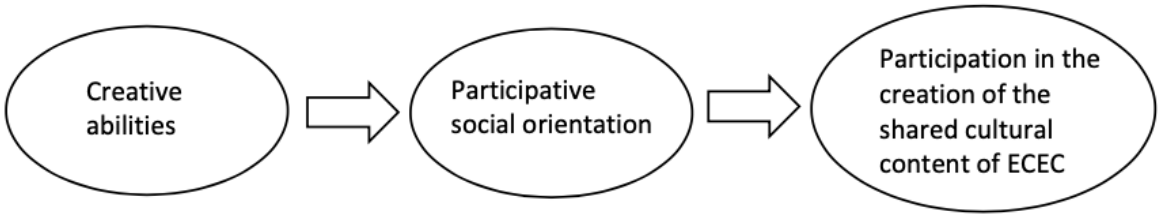

FIGURE 1 The creative process of social orientations

Children's creative thinking abilities as predictors of participative social orientation in ECEC

Creative thinking or divergent thinking abilities can be defined, for example, in their fluency, flexibility and originality of concepts, which are supposed to predict their possibilities of acting creatively (An et al., 2016; Runco, 1992; Runco & Acar, 2012; Torrance 1965). Divergent thinking has been defined as ability to generate a variety of ideas and associations for a problem (Guilford, 1968 as cited in Hoffmann & Russ, 2016; Wallace & Russ, 2015). In ECEC, creative thinking abilities have been related to pretend play, which has been considered to increase children's divergent thinking. Children can utilise in any domain the creative thinking abilities and divergent thinking, which they have developed in play (Russ, 2016; Russ & Dillon, 2011). Children's pretend play has also been found to predict their divergent thinking skills over time (Wallace & Russ, 2015).

Children's social orientations are an instrument for learning children's different ways of acting in everyday situations in ECEC. Social orientations are formed based on a fourfold matrix, which has two dimensions: openness and change (Figure 2). First, social orientations are defined according to children's open or closed perception and, second, in their tendency to change the social terms of the situation or adapt to those terms. For example, the open and changing observed action of children is defined as *participative*. The other social orientations are *adaptive* (open and unchanging), *withdrawing* (closed and unchanging), and *dominant* (closed and changing). Children's social orientations have been used, for example, to study situations including child bullying in ECEC (Reunamo et al., 2015), stress and cortisol levels (Reunamo et al., 2012) and children's role play (Reunamo et al., 2013).

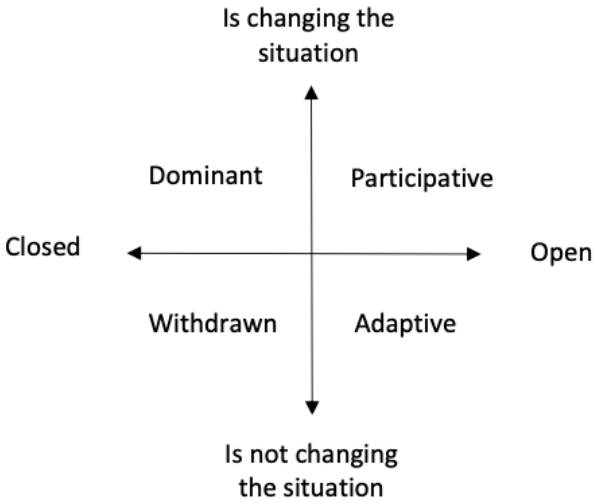

FIGURE 2 Children's social orientations (Reunamo, 2007)

The dimensions of participative orientation, openness and change are near the most extensive definition of creativity. In this so-called standard definition of creativity, creative product or behaviour is defined as both new or original and appropriate or valuable (Runco & Jaeger, 2012). Amabile (1996) has also added openness of the process to the definition of creativity. If a creative product is new, there has been some change occurring compared to the previous products. If the process is closed, something new can't occur.

Our premise is that children's participative orientation as open and changing approach can be considered having a connection with children's creative potential and being an indicator of possibilities for creative participation of shared content in interaction situations in ECEC. Earlier studies have shown that children's participative orientation has had connections with playful environments, for example children in the academically oriented preschool had less participative orientations than those in the play-based

preschool (Cheng et al., 2015). Children's agency has become possible in playful environment (Rajala et al., 2016). Connections between play or playful environments and creativity have also been noted for example with divergent thinking and play (Russ, 2016), in the directing documents of the ECEC (EDUFI, 2018), and in children's involvement (Laevers, 1994). Vygotsky (2004) stated children's pretend play as the most authentic example of creativity. In our previous article, we studied children's creative abilities and social orientations with an interview tool (Nikkola et al., 2020; Reunamo, 2007). The results showed that participative orientation had a positive connection with creative abilities.

Socio-cultural approach to children's creative participation in the context of ECEC

Socio-cultural approach emphasizes that all creativity is not merely individual but also a social and cultural phenomenon (Glăveanu et al., 2020). Culture can be defined as an accumulation of artifacts (norms, ideas, beliefs, material objects, etc.) that are ever-changing through the personal and collective acts of creativity. Therefore, creativity is the main engine behind cultural change and transformation (Glăveanu, 2010). According to Reunamo (2009), in Vygotsky's thinking, the basic unit of action is the interaction that mediates cultural content.

Creative building of the shared content in ECEC occurs in interaction situations. The social and interactive nature of creativity, participation, and learning is obvious in ECEC (Mouchiroud & Lubart, 2002). Children grow up, learn, and develop in interaction with peers and personnel (EDUFI, 2018; Fleer, 1995) and their competencies develop within relationships. Besides children's individual abilities, for example their creative thinking abilities, have an effect on their action in the interaction situations in ECEC, they act in an existing environment where they have to be adapted. According to Rogoff et al. (1995) individual and sociocultural dimensions are inseparable, for example, children's development is a process of participation in sociocultural institutions.

The role of creativity in the pedagogy of ECEC has often been restricted to play and arts and skills. However, both are important in enhancing the creative potential of children through meaning-making and participation in the society (Bodrova, 2008; Kangas et al. 2020). According to Vygotsky (2004), play is a creative reworking of the impressions that are used to construct a new reality. More holistically, play in ECEC can be understood as a societal path through induction (Kangas et al., 2020). However, the perspective of creativity should be raised to better understand the processes of participation. In considering children as the participants of ECEC pedagogical culture, it is important to study children as productive and creative members of the education process (Reunamo, 2007).

The current study

In this article, we focus on the participatory approach of children's social orientations. The definition of children's participation can be viewed from different perspectives, from democratic participation to participatory learning approaches (Duncan, 2009; Kangas, 2016; Weckström et al., 2021). Children's participative orientation indicates children's opportunities to influence their learning and culture of ECEC (Kangas, 2016). In other words, their creative participation influences the social culture of ECEC. The research question is: Are children's creative abilities associated with their observed social orientations in the everyday interaction situations of ECEC? Our hypothesis is that children's creative thinking abilities are positively associated with children's participative social orientation (Nikkola et al., 2020).

Method

This study is part of a larger ECEC Progressive Feedback project (blogs.helsinki.fi/orientate), where 280 children in two municipalities participated in the research. The research aims to understand the connections between children's creative abilities and children's social orientations in everyday interaction situations in ECEC.

Participants

In two municipalities in southern Finland, 280 children in 23 ECEC institutions (ECEC centres and preschools) participated in the research. Children's age in the groups was 13–83 (M = 65.74, SD = 15.00) months. The age was not known for 23 (8.2 %) children. The participants included 138 (50.0 %) male and 138 (50.0 %) female children. The gender was not reported for four (1.4 %) children. There were 29 children with special needs (10.4 %). There were 14 (6 .0 %) of children, who had one or both parents with immigrant backgrounds. The background was not reported for 40 (17%) children.

The Thinking Creatively in Action and Movement-test

The Thinking Creatively in Action and Movement [TCAM] -test consists of the behavioural observations of four different tasks. They are considered to measure children's creative thinking abilities, in other words fluency, originality and imagination. Torrance's TCAM-test is a classic test of early childhood creative thinking in action and movement, which can still be considered valid and reliable (Zachopoulou et al., 2009). The TCAM has been used for example to study the effects of motor creativity intervention programmes (Ourda et al., 2017; Zachopoulou et al., 2006), the connections between children's motor creativity and motor competence (Sturza Milic, 2014) and the effects of the creative relaxation programme and motor creativity (Justo, 2008). The TCAM-test has also been

used to study the relationship among gender, sibling constellation, age and creativity performance (Alsrour & Al-Ali, 2014; Vong et al., 2020). The TCAM is designed to take into consideration six principles needed to measure creativity in preschool children. Firstly, moving is a more appropriate way for preschool children to express themselves than for example writing or verbal answers. Secondly, the warm-up and the motivating procedure should be designed for the test procedure. Thirdly, the content of the test should be familiar for children and, fourthly, tests should be easy to administer and score. Fifthly, the experience of the children should be natural and, sixthly, it should not take too much time (Torrance, 1981).

In the TCAM-test, there are three activities measuring *fluency* and *originality*. In Activity 1 (How many ways?), children are asked to move in the room using as many ways as they can invent. In Activity 3(What other ways?) children are invited to figure out how to put a paper cup in the wastebasket. Children are told to come up with as many possible ways to do this. In Activity 4 (What might it be?), the children are asked to invent as many things as possible to do with the paper cup. Fluency is the sum of different things or ways the children will produce in the activities. The originality is the sum of the points scored to responses that the children will produce in the activities. The points are given according to their rareness (0-3 points).

Activity 2 (Can you move like?) is designed to sample the child's *imagination*. In this activity children were presented with six different tasks in which they were asked to pretend to:

- move like a tree in the wind
- hop like a rabbit that is being chased by somebody
- swim like a fish in the river
- crawl like a snake in the grass
- drive a car on the highway
- push an elephant that is standing on something she or he wants.

A Likert scale from 1 to 5 was used to measure imagination. In the scale 1 means no movement, 3 is adequate and 5 is excellent. The time used in conducting the test was not limited, it varied from 2 minutes to 45 minutes.

A total of 280 children participated in the TCAM-test, and 235 children achieved results that were possible to standardise according to Torrance. The standardising was made for 3–6-year-old children (Torrance, 1981). The data have been converted from raw score to standard score in every age group using a table that was developed by Torrance. The total score (creativity test score) has been obtained by finding the average for the fluency, originality and imagination scores.

The TCAM-test includes three creative thinking abilities, which are *fluency, originality and imagination*. The creative thinking abilities were studied both as a summary variable and

separately (see Nikkola et al., 2020). The reliability of the three items of the TCAM (the standard scores of fluency, originality and imagination) was .840 (Cronbach's alpha). Consequently, the test items can be considered describing the same phenomenon (creativity) adequately. *Fluency* and *originality* correlated highly with the total score, r = .857 and r = .817, respectively. *Imagination* correlated modestly, r = .463. However, the internal consistency of creative abilities was high. In the analysis, both the total score and individual abilities are included. In this research, the reliability between researchers was not studied. However, the reliability between researchers has been high in earlier TCAM research (.89–.91) (Ourda et al., 2017; Zachopoulou et al., 2009). The partial correlations were controlled by age.

According to Kim (2007), the TCAM-test is still relevant for several reasons. It has for example good reliability, has proven validity and is easy to use. It is also neutral for factors such as gender, race, community status, language and culture. However, divergent thinking and creative abilities do not explain creativity completely; the environment and motivation also affect testing outcomes (Amabile, 1996). The TCAM has been updated last time in the year 1981, which has an influence on the originality table (Kim, 2007). However, TCAM-test scores have shown significant positive relationships with other creative characteristics. Scores have also had connections with children's home environment and parenting styles that allow a child greater freedom. IQ tests and TCAM scores have had weaker connections, which shows that TCAM is not measuring general mental capacity but creative thinking skills (Kim, 2007).

The child observation instrument

Children's social orientations in ECEC were studied with Reunamo's child observation tool (Reunamo, 2007) (https://blogs.helsinki.fi/orientate/files/2015/12/obs15.pdf). The child observation tool consisted of 9 observed categories, namely the general activity frame of the child, the main action of the child, the child's main object of attention, the child's main social peer contact, the physical activity level of children, children's involvement (Leuven scale for involvement) (Laevers, 2005), emotional expressions, social orientation and the nearest teacher's activity.

In this study we concentrate on children's social orientations. The observers were supposed to choose the most appropriate social orientation of the children according to the next alternatives:

1) Is adapting and open during observation: accepts and acknowledges
2) Is participative and open during observation: interactive and cooperative
3) Is self-centred and insistent during observation: pushy and dominant
4) Withdrawn from the situation: may be non-social and non-interactive
5) Cannot be identified

The children were observed using systematic sampling in five-minute intervals. The actual observation lasted only one minute and happened at the same interval each time. The additional four minutes was for coding and preparing for the next observation. On average, each child was observed five times daily which makes on average 40 total observations (standard deviation 26 observations). The difference in the number of observations was due to child absences from ECEC during observation days. Furthermore, young children in smaller groups were observed more often.

The reliability of the social orientation observation was estimated by paired observations. Two observers observed the same children at the same time intervals independently, unaware of each other's ratings. There were a total of 620 independent observations. Kappa for the social orientation was 52.4% (CI 46.6%, 58.2%, $p < .0005$), which indicates reliable observation. The agreement for adaptive orientation was 58.5%, participative orientation 81.9%, dominating orientation 68.8% and withdrawn orientation 60.5%.

Procedure

The parents and guardians accepted the consent forms for the children to participate in the research. They were also informed of the objectives and progress of the study. The TCAM-test was translated and edited in Finnish by one of the authors of the article. Teachers organised the Thinking creatively in action and movement-test (TCAM-test) between January and May 2015. The TCAM was conducted by the teachers but scored by the researcher according to written results. These results included descriptions of child behavior or activity, such as "running" in the Activity 1. The Activity 2 was conducted and scored by the teachers. The observations were conducted by the teachers and they were trained for the observation and the TCAM by researchers. ECEC teachers conducted the TCAM for the children of their own group.

Two randomly chosen observers observed a group in each other's centre/school. The daily observation session lasted for four hours between 8:00 and 12:00 hours. Altogether the observers observed the children for eight days on random days between January and May 2015. The observers did not have any background information on the children. The dates when the observer arrived were not revealed for the employees of the ECEC institutions where the observations were conducted.

The research data does not create an identifiable register of the research participants. The data making the identification of the child possible, for example children's names, birthdates, social security numbers, and other were not collected. The personal information of the parents and the teachers were collected neither. Each child and child group in the research were given a number that was used on the child evaluations and the TCAM. The training for administering the interviews and TCAM-test included aspects of respecting children's rights and feelings. The measures used in the study, including the

TCAM-test were designed to be a natural part of the activities in ECEC and not to be an additional strain for children. The staff participated in the study as research colleagues. They received feedback on the group activities to enhance their work with the children. It was not possible to identify the children and staff in the feedback. The measures of the study were possible to use as instruments of the pedagogical documentation. The connections between the TCAM and the other parts of the project were also introduced and discussed. The municipalities participating in the project were using their respective results to direct their development of ECEC.

Statistical analysis

The means of the standard scores of fluency, originality, and imagination were analysed (creativity total score). The standardised scores of the total score, fluency, originality and imagination correlated with children's age, respectively, r = -.303, r = -.284, r = -.268, r = -.240. In addition, children's observed participative social orientations correlated positively with children's age, r =.247. This indicates that when studying the correlations between test scores and children's observed social orientations, children's age may be and intermediate variable. Therefore, we use partial correlations to control for age, and consequently prevent age from being an intermediate variable. Quantitative analyses of the connections between the parts of the TCAM-test and children's observed social orientations were conducted using IBM SPSS Statistics 25.

Results

Descriptive results

The results of the TCAM test include three creative thinking abilities, which are *imagination, fluency* and *originality*. The mean of the parts of the test can be calculated resulting in the creativity thinking measure (Table 1). Means are supposed to be 100 in the test.

TABLE 1 The means, medians and standard deviations of the test items of the TCAM

	N	*Mean*	*Median*	*Std. Deviation*
Std. creativity test score	234	98.08	95.33	16.81
Std. imagination	234	96.46	97	17.11
Std. fluency	234	97.19	93	20.65
Std. originality	234	100.55	96	20.27

The percentage values and the standard deviations of the observed social orientations were studied (Table 2). The observed social orientation (see Figure 2) was mostly open (75.2%), which means that children were observed to consider other people's opinions and ideas. Firstly, the open orientation consisted of adaptive orientation (32.4%), which meant that children considered others' ideas, but did not try to change the situation themselves. Secondly, the open orientation could mean participative orientation, which occurred during 42.8% of the observations, which meant that children were open to others' suggestions, and at the same time, bringing new content to the situation indicating a shared creative process. Closed orientation without considering others' ideas was less frequent (17.1% of the time), with either withdrawn orientation (11.3%), indicating no observable near contact. The other option for closed social orientation was dominant orientations (5.8%), which meant that children tried to change the context without considering others' ideas.

Most of the children were observed in more than one of the four social orientations. However, children tended to have certain preferences for their social orientations. Thus, the profiles of children's social orientations could be built by adding the percentage of the four orientations in the one nominal variable into four corresponding different variables as continuous scale variables. This makes it possible to study the correlation between children's social orientations and creativity test scores. The standard deviations of the observed social orientations were 9.15–16.30.

TABLE 2 The percentage values and the standard deviations of the test items of the observed social orientations

	N	*%*	*Std. Deviation*
Adaptive	235	32.4	15.74
Participative	235	42.8	16.30
Dominant	235	5.8	9.15
Withdrawn	235	11.3	11.21
Unclear	235	7.7	13.81

The relations of children's creative abilities and their observed social orientations

Creative thinking abilities and children's observed social orientations were studied with partial correlations (Table 3). The results showed that creative abilities had statistically significant correlations with *participative, adaptive,* and *withdrawn* observed social orientations. However, only *participative* orientation had positive correlations with creative abilities. All creative abilities, *fluency* (r = .157, p = <.05, N = 234), *originality* (r =

.132, p = <.05, N = 234) and *imagination* (r = .130, p = <.05, N = 234) had statistically significant positive correlations with *participative* orientation. *The mean score of creative abilities* had the strongest correlation with *participative* orientation (r = .164, p = .012, N = 234). In other words, children's ability to find different and original ways to move in the space, throw a paper cup into the waste basket and find different ways of doing something with a paper cup were connected with their open and changing way of acting in ECEC. There is a correlation between creative processing of physical objects and participative social orientation. In other words, creative processing of physical environment is connected with participative orientation that adds new content to the social situation.

Other connections with creative abilities and social orientations were negative. *Adaptive* social orientation correlated negatively with the *mean score of creativity* (r = -.134, p = <.05, N = 234) and with *imagination* (r = -.157, p = <.05, N = 234). In other words, creative abilities correlated negatively with adaptive orientation that looks at the context openly, but tries to accommodate to the conditions. Adaptation is about the ability to adopt in the changing contexts, not about creating new context or conditions. *Withdrawn* orientation also had a negative correlation with *fluency* (r = -.158, p = <.05, N = 234). That is to say fluency correlated negatively with children's closed and adaptive orientation. In other words, fluent creativity and uncommunicative social relations do not attract each other. To put it concretely, the ability to find different ways to move, throw a paper cup or find different ways to use a paper cup correlated negatively with withdrawn social strategies. However, the correlations of children's social orientations and creative thinking abilities were rather small. A *dominant* or closed and changing way and *unclear* orientation did not have statistically significant correlations with creative thinking abilities.

TABLE 3 The partial correlations between the TCAM and observed social orientations (N = 234)

	Adaptive	*Participative*	*Dominant*	*Withdrawn*	*Unclear*
Std. creativity	-.134*	.164*	.044	-.126	.031
Std. imagination	-.157*	.130*	.108	-.052	-.009
Std. originality	-.103	.132*	.022	-.104	.030
Std. fluency	-.094	.157*	-.006	-.158*	.054

*p <.05

Discussion

The purpose of this article was to study children's social orientations as creative processes in ECEC. We studied the connections between children's creative thinking abilities and social orientations in interaction situations in ECEC. The results showed that participative orientation had positive correlation with creative thinking abilities, which

were fluency, originality and imagination. Children's social orientations inform us of the fruitful conditions for children's participation in the building of the shared cultural content of ECEC. A participative orientation or changing and open way of acting in social interaction situations can be considered to predict children's participation in this process. According to Amabile (1996), openness is a prerequisite for creativity. Engaging in the culture and contributing to its transformation are essential elements of both participation and creativity (Glăveanu, 2010). Children's creative thinking abilities or divergent thinking can be considered to indicate their creative potential (Runco & Acar, 2012). Enhancing children's creative potential enhances their creativity, but also enhances their possibilities to participate. However, creativity in interaction situations has not been self-evidently supported in ECEC. Teachers have considered the number of socially creative children be relatively small (Chesnokova & Subbotsky; 2014). In addition, a participative orientation has also been shown to be rare in the situations concerning teachers in ECEC (Nikkola et al., 2020).

There were also negative correlations with adaptive orientation and creative thinking abilities and with a withdrawn orientation and fluency. An adaptive and withdrawn orientation are both unchanging ways of acting. In comparison with participative orientation, these types are easier for teachers and more acceptable in ECEC in the situations concerning teachers (Nikkola et al., 2020). However, openness to the situation can be considered to enable participation in the building of a shared cultural content in ECEC. Within creativity learning can be viewed through its broader, multimodal, and dynamic goals for empowering children through participation, to support them in navigating and experiencing agency in the uncertain world (see OECD, 2018; Kangas et al. 2020). If children often use closed orientations, in other words, *dominant* and *withdrawn* orientations, they are in danger of not being creators of the shared content of ECEC culture. Furthermore, an *unclear* orientation tells us that children have difficulties connecting with the structure of ECEC culture and supporting their participation is essential.

According to Glăveanu (2010), culture can be defined as an accumulation of artifacts (norms, ideas, beliefs, material objects, etc.) that are ever-changing through the personal and collective acts of creativity. He states that creativity is the main engine behind cultural change and transformation. The OECD Education 2030 project states that transversal competencies should be at the center of education: creating new value, reconciling tensions and dilemmas and taking responsibility (OECD, 2018). Of these, creativity is visible in the first one within the contexts of creativity as innovations and new solutions, as well as within the later ones, together with participation through the context of social relations and problem-solving skills. According to Kangas et al. (2020) to address these "Transformative Competencies" and to support children in being innovative, responsible and aware, is to consider education through the notion that participation and playfulness

is creative learning. In the ECEC setting, creativity can be seen to combine enthusiasm, co-operation and challenging personal skills and competencies, but only when scaffolded through pedagogical participation by the personnel (Kangas & Harju-Luukkainen, 2021). Enhancing children's creative thinking abilities, their creative potential and participating in the building of the shared content of the ECEC is essential for the future. Creativity is also an important part of learning and participation in ECEC. Especially play has been considered important for creativity and learning (Kangas et al., 2020). The perspective of creativity is strengthening its importance in the pedagogy of ECEC.

In conclusion, it is important to consider children as creators of the ECEC. Children participate in the production of new social content, which means that children participate in the production of the very learning material that is processed and learned. Children participate in the production of the learning content and the actual everyday curriculum taking place in ECEC. The results indicate that creativity is not just about physical environment, it is about creating the future, learning to create new culture together with others.

Limitations of the study

The data of this study represent the ECEC in Finland and thus the results cannot be generalised to other ECEC contexts. The correlations between the two instruments implemented in this study were low. Low correlations are often the case between independent measures, but it may also reflect the original observations which included different ECEC activities including both everyday routines and creative activities. The variety of observed activities results in a lot of intermediate variables. However, correlations are not used to describe effects but relationships between study items. Thus, we can simply conclude that creativity is related to social openness and agency. The results raise more questions than answers: We hope the article is one step in studying children's activities as a socially creative process where creative sharing represents the essential element of ECEC.

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