

Pedagogic and didactic practice in relation to kindergarten environment. Results from the ODIN study

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Keywords

Movement activities, outdoor learning, risky play, fantasy, immersion, kindergarten.

Abstract

The objective of this qualitative study was to investigate the pedagogic and didactic practise of outdoor kindergarten environment as compared to conventional kindergarten environment in rotation kindergartens. Qualitative data were collected in four kindergartens through eight semi-structured interviews and observations of activities among the children and preschool teachers. Four themes emerged from the analyzed interviews: 1. Imagination and immersion, 2. Risky games 3. Motor skills, and 4. The role of the preschool teacher. This study highlights that the children moved more versatily in the outdoor environment. There were greater opportunities for gross motor games and risky games. In addition, there were more time for immersion and imagination in the outdoor environment.

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Introduction

Many young children spend much of their awake time in institutions like daycare centers, kindergartens or preschools (Database, 2021). Thus, these institutions can contribute substantially to the play and activity of the child promoted by the didactic methods used by the preschool teachers (Sønnichsen, 2017) and might consequently influence the child's long-term well-being and health. Recently, the focus has changed from a socioemotional perspective to a more didactic perspective associated with the learning processes of the child (Bleses et. Al. 2016, EVA, 2020). In kindergartens where the preschool teachers create learning environments with a high degree of movement activities and motor play, almost all interactions between children and preschool teachers are positive. In nine out of 10 kindergartens the children experience to succeed when they participate physical activities initiated by preschool teachers (Bleses et. Al. 2016, EVA, 2020). This shows that when working with physical active play, there is good interaction and success experiences and children's main motivation for participating in physical active play is that they think it is fun and joyful (Hemmings, 2007, Brockman et. al. 2011, Mikkelsen, 2011, Bleses et. al. 2016, Education MoCa, 2020). This is an important point in relation to the didactic considerations of the preschool teachers.

This connection between children and preschool teachers has not been investigated in the outdoor kindergarten environment. Outdoor kindergartens, as a contract to conventional kindergartens, are kindergartens where almost all hours during the day are spend outdoor in a forest environment often without a formal playground. The overall aim of this study was therefore to investigate if activities in general and the physical activities in outdoor kindergarten differed as compared to conventional kindergartens.

The objective of this present qualitative study was to investigate if the pedagogic and didactic practise of preschool teachers in relation to the children's motor skills, (risky) play, nature and personal and social development differ according to the kindergarten environment. We hypothesised that compared to when the children were in the conventional kindergarten environment, children attending the outdoor kindergarten environment were more physically active due to more time spent in the nature on uneven ground with a higher pedagogic focus on physical activity, use of nature and risky play.

Method

This study is part of the 'Outdoor kindergartens - the healthier choice?' (ODIN) study which was initiated with the main goal to investigate pedagogic and didactic practise as well as health effects among children attending outdoor kindergartens compared to children attending conventional kindergartens.

This part of the study has an interpretive hermeneutic phenomenological approach. Through a hermeneutic approach of analysis, we seek to understand and interpret opinion contexts in relation to the observations of the children and the preschool teachers as well as to the preschool teachers pedagogic and didactic practice related to the children's motor skills, (risky) play, nature and personal and social development in the two environmental contexts. The interviews were carried out using a semi-structured questionnaire, where we both prepared general research questions primarily for ourselves, and specific questions for our informants (Kvale & Brinkmann, 2015, Diccico-Bloom & Crabtree, 2006). The interview guide comprised four themes: 1. The forest as a frame, 2. Risky play, 3. Professional personal competencies, and 4. Didactic considerations.

This was based on theoretical and practical knowledge of the field and a sparingly knowledge of the informants. The focus was on being open to new perspectives and information that the interviewed could produce, and we were thus trying to understand the lives of the informants from their own perspective. The interview was thus approaching an everyday conversation, but *"(..) has as a professional interview a purpose and involves a special approach and technique: it is semi-structured - it is neither an open daily conversation nor a closed questionnaire"* (Kvale & Brinkmann, 2015:45).

The observations of the preschool teachers and children were carried out prior to the interviews in order to be able to 'get to know the field' and go into the work of the preschool teachers and the target group (Hastrup & Tjørnhøj-Thomsen, 2011, Aagerup, 2015). By conducting pre-interview observations, it became possible to have more insight into the work in question with physical activity and play in the two environmental contexts.

The analysis was conducted in accordance with inductive content analysis methodology (Kvale & Brinkman, 2015). The analysis was conducted in three steps. First AB and MS noted initial analytical considerations into a logbook. Secondly, meaningful insights from all transcripts relevant to the aim of the study, were identified and extracted using analytical questions from the interview guide (1. How does the forest as a frame and environment impact the types of physical activity and play? 2. What are the opportunities and barriers relative to risky play? 3. What is required of the preschool teachers' competencies?) Thirdly, the extracted findings were analyzed focusing on resemblance in meaning and categorized into analytical themes. During categorization, the notes from the interviews and the logbook were used to situate the findings in the context.

Study population and data collection

Data collection was conducted in four rotating kindergartens in the Copenhagen area in the period February 2020 to December 2020. Rotating kindergartens are kindergartens where the children and their preschool teachers shift their kindergarten environment from week to week, thus spending one week in an outdoor kindergarten environment, often in a forest or a rural area, with a large outdoor area where they spend most of the day outside; and the next week in their conventional kindergarten in the city where the children have residence. When in the conventional kindergarten environment, the children spend time both indoor playing, drawing and tumbling and outside in the kindergarten playground.

The interviews were conducted with eight preschool teachers by MS and AB and lasted 35-45 minutes. Two preschool teachers from each institution participated. The participating preschool teachers were three men and five women in the age of 30-60 years old and were observed and interviewed in both kindergarten environments. The interviews took place in the outdoor kindergarten environment or at the conventional kindergarten environment and were conducted after the preschool teacher's interactions with the children in different environments had been observed.

All interviews were digitally recorded and afterwards transcribed verbatim, including pauses, laughter, vocal pitch or tone of voice.

In this study Risky Play is defined as: *“An exciting and challenging play, that involves uncertainty and risk of physical injury”* (Sandseter 2015: 16). Risk filled play can be divided in six categories; 1) play in heights - risk of injury when falling, 2) play in speed - uncontrolled speed, which can lead to collisions with something or someone, 3) play with dangerous tools - can lead to injury, 4) play near dangerous elements - where you can fall into or off something, 5) wild play - where you can hurt each other, and 6) disappearing/hide and seek play - where you can disappear (Sandseter 2010, 2015).

Ethical considerations

All personal information were anonymized. In addition, oral consent was given for data to be used in the project for further processing and analysis. The participating preschool teachers gave written consent as did the parents of the children attending the kindergartens. Permission from the Ethical Committee was evaluated not to be relevant (journal nr.: H-19053587). Permissions from the Capital Region Data Agency and the Danish Patient Safety Authority were granted (Journal nr.: P-2020-54 and 31-1521-8, respectively). Our data material consisted of information that cannot identify individuals directly or indirectly, hence the data was considered as anonymous.

Results

Based on a thematic analysis of the empirical material, four analytic themes emerged by comparing the outdoor kindergarten environment with the conventional kindergarten environment:

1. What can the body do? Motor skills in the forest.
2. At the limit - risk filled play
3. Immersion and imagination
4. The preschool teachers as a physical participant

1. What can the body do? Motor skills in the forest

A Danish study that examined motor skills, consciousness, ingenuity and frequency of sick leave among children from an outdoor kindergarten compared to a conventional kindergarten showed that children from the outdoor kindergarten scored better in all parameters studied (Vigsø, 2006). Furthermore, a Norwegian study of 5-7 year old kindergarten children found

that daily play for 1-2 hours in the forest gradually improved the children's motor skills for a period of over 9 months compared to the children who spent 1-2 hours daily on the kindergarten playground (Fjørtoft, 2001). In the current study, the same tendency was seen through the children's play in the versatile terrain. In the forest the children have opportunities to pursue their desire and joy through their physical activities with a possible impact on their motor development.

Statements from the preschool teachers:

"They use their bodies in a different way here in the forest. The body is more free and more instinctively "I want to". Where the children can be limited on the playground, there is bodily freedom in the forest. I think that is the biggest difference".

"There is more space compared to if it is a playground, where you might have to stand in line to get the right place to climb the tower or get a spot in the other good places. So here in the forest there is room, space so that you may not feel observed too much by the others, so you may also dare to challenge yourself physically on some of the frames and use your body in many ways".

The preschool teachers are speaking about the importance of the forest being diverse and having room to express physically, in a different way than at the playground.

Another preschool teacher said:

"There are many preschool teachers who have a perception of 'these motor skills', we do it every Tuesday morning, we throw balls or something like that. But motor skills are constantly evolving in the forest, where the children roll and crawl, roll and creep around the hills and the uneven ground".

The forest apparently open opportunities to plan more versatile pedagogical work with motor skills. The children have more curricular in the forest, as expressed by one of the preschool teachers:

"They have just achieved a huge self-confidence in relation to their motor skills, but also, I think, in relation to their general self-confidence in themselves. So not only motor skills, but also personally, and it is connected. It gives something to the children that they stand on their own feet in the forest. They know where to climb, they know they dare, and sometimes we are really just interfering too much as adults".

'The forest's opportunities simply give something to children, that I think they don't get anywhere else. So, as we could see on our trip today, the forest presents some rough motor challenges, and it gives some "hair on the chest" if you can be so cheeky and say that. It gives something to the kids that you simply can't get at home in the playground.'

The preschool teacher states here, that the forest open opportunities for the gross motor skills to be challenged, but also that they learn to be independent. It is easier to challenge and develop motor skills in the forest environment, as compared to the conventional kindergarten environment, where the pedagogical work with motor skills and physical activities typically is scheduled for a weekly day. The versatile possibilities in the forest, with uneven terrain, hills, trees to climb etc., optimized the child's motor skills and personal capabilities and competencies due to more room and diversity. Also, because the preschool teachers allowed the children to challenge themselves by e.g., climbing higher in the trees or running faster.

2. At the limit

The data showed that the forest opens many opportunities in the realm of risky play, which both develops motor skills, but also their personality and social skills of the children.

One of the preschool teachers talks about the forest opportunities regarding risky play:

"Well, they're really moving. They climb a lot of those trees. And that "Witches Hill", you can run on it really fast. And they're going to fall over each other, too."

Another said:

"They dare to cross their own limits, and they simply learn to gain some confidence and some faith in themselves in the challenges they face. Especially in the forest. And they dare to trust themselves and they dare to try some things that may seem dangerous. They choose to do it

[challenge themselves, red.] *on slopes now, so they are the ones exploring their new boundaries, you might say. They're all pushing each other to dare more."*

(...)

"They know everything at that playground. And the things there. It may also be the adults who are not good enough to create new spaces for them out at the playground. I think maybe mostly it is because kids can thrive in most places, as long as you do something right for them".

It seems like, that in the forest, there is a greater opportunity for the children to be challenged, both motorically, but also in relation to their courage and limits. They try new and more challenging things in the forest with significance for their personal development and experience of daring more.

The children are having success stories by overcoming some bodily challenges in risky play, which strengthens their self-esteem and confidence. " (...) *and then she runs around with a big smile and comes home and tells about this experience she had in the forest"*.

Playgrounds can challenge children, e.g., by climbing on the roof of the playhouse, but once again, it is a known challenge, which they can practice again and again without the conditions are changing. Thus, it seems like, that in the forest, the opportunities of risky play are bigger, as example "play in highs", "play in speed" and "wild play" as Sandseter describes part of the risky play (Sandseter, 2015).

3. Immersion and imagination

The study further showed that the forest opens special spaces and opportunities for immersion and imagination - both in quiet play and in play involving movement. The children can alternate between exploring, resting, playing, being actively creative and watching other children play. Imagination unfolds and fewer conflicts are seen.

Statements from preschool teachers:

"Out here [in the forest, red.] it is your imagination that sets limits. At home [the conventional kindergarten environment, red.] you are often inhibited. Children are often inhibited."

(...)

"There is a lot about the forest that can help provide a great deal of immersion for the children. First of all, I myself think that the toys themselves in our institutions, our home turf, where it is safe and nice to sit with toys, that they are going to hold on to some fixed roles. But I think the forest offers an opportunity for curiosity."

(...)

"I think these "forest children" have a completely different calm. Quite another. Yes, they clearly have a different everyday life from the kindergartens where you are kind of locked up. It sounds like some prison or something, it's not at all. But there's just a completely different charm. They get used to listening to birdsong every day and fresh air, and nothing happens about you laying down on the forest ground and doing something."

As the preschool teacher expressed in the above quotes, the forest open opportunities for immersion, imagination and curiosity. Immersion can have many physical expressions; laying on the forest ground, enjoying the moment, and the fact that children in the forest have a special calm and possibility to concentrate. The playing becomes more intense and less and less interrupted in the forest, and the forest opens for the opportunity for greater degrees of curiosity and imagination in comparison to the playground, where there are structures and constraints that controls the day in a completely different way.

Another of the preschool teachers talks about the opportunity for immersion in the forest:

"Their [children's, red.] games are getting more intense when in the forest. Because they are not interrupted in the same way by others. And if they're interrupted, it's not completely disconnected, we just move a little bit or go just like that, they just kind of get around it. I can see that there are some children who do not have as lively an imagination and may sometimes need a hand. Right today with the "shudder gap" [named by the children and preschool teachers, red.], they never lack anything because it's just "wow", they just have to climb up. And if you don't dare, you're a little bit in it anyway, if you sit a little over here on the side of the slope."

(...)

"They're getting better at immersing themselves, I'd say. So, they get better at researching things. They become better at relaxing, especially in relation to immersion and concentration, and forming relationships. So, I would say there are also social relationships that are

developing. Especially between the adult and the child. So, I think that's a lot more contact with the child."

(...)

"Oh, but it's so cool to have that freedom, that is. That they just, they feel like it's their world out there [in the forest, red.]. That they have a say about their day. Well, they can go and get in a mess down there themselves. They have a cave inside the blackberry bush, they know we can't get in there."

The above excerpt from interviews shows pure signs of forest possibilities in relation to risky play, immersion and imagination, but what about the role and didactics of the preschool teachers? How does this play into the children's play and activities?

4. The preschool teacher as a physical participant

The results showed that the preschool teacher as a physical participant were of utmost importance in relation to the physical activity level of the children. Especially when it came to children which did not move much by themselves. The ones that needed support to engage in more physical or motorically challenging games.

As one preschool teacher expressed their role in supporting the children:

"My role is first and foremost to support them. But of course, it also means in some situations to stand close to them. That when they try the first times, you stand there and make sure to give them a noticeable sense of security, so that they do not fall and hurt themselves. So, if they need me to stand right behind them. Or I hold their hand if we're out in the forest, just when you walk down some steep hills. That they have my hand and they have my security to be able to dare, and maybe also dare to go one step further, just to get down or up. Well, I'm not going to lift them all the way. They are encouraged to try and then we support them in what they want."

One preschool teacher shared how they participated:

"Well, I'm going to be a lot more like a child in the forest. I take much more part in the activities in the forest. I'll climb it myself. I also do the challenges the kids do (...) That is, if someone says, "Can I climb the tree?" and you can see it's a tall tree, you say "yes, but then I'm going".

Furthermore, another preschool teacher talked about their bodily participation and its importance:

"And then I could see that as soon as I join, there will just be a bunch of others as well. But it means that you want to move, even if it rains and even if it's cold, you are kind of positive, I think that's important. And so, I think, and that may be a little harshly said, but I think that you have to be in reasonably good shape to be a part of it. There is no point in not being able to cross the hills yourself. And it may be someone who shakes their head at me a little bit when I say that, but I think that's important because we have to take the lead with the kids and we have to tumble."

This showed that the active, physical participation of the preschool teacher, had a positive impact on the children's participation and motivation for trying out new physical challenges in the universe of risk filled play. In contrast to the known routines of the playground.

One preschool teacher talked about the differences in their role when they were in the outdoor kindergarten environment as compared to the conventional kindergarten environment:

"At home [the conventional kindergarten environment, red.] they don't need us adults as much, because they know everything on the playground. So, it can in part be us, the adults, that isn't good enough to create new spaces for them on the playground (...). In the forest there is a greater immersion in the relation between child and adult. You are with the children in another way. I see myself as more present in the forest than at home. I think I am a much more present preschool teacher in the forest".

(...)

In the conventional kindergarten, before lunch, we have a structured agenda where we make some small groups across the different rooms and age groups, but in the forest it's a bit more fluent when we are out there, because we only have our own group. When you are at home you kind of have to take the entire house into consideration. In the forest we follow the children more and see what happens. (...) I mean, we are more controlling, and we have more adult

managed assignments at home. Of course, they get some free space to play, but we are much more controlling than in the forest.”

The statements showed that it partly is about exploring new connections and opportunities together with the children. The preschool teachers experienced less structure and demands in the outdoor kindergarten environment which gives them more time and presence together with the children. It is seen as being valuable in order to be a present adult, who is curious about the surroundings along with the children. As one preschool teacher expressed it: *“We are all together on an adventure in the forest”*.

Analysis and discussion

This qualitative study provided insight into the pedagogic and didactic practise of preschool teachers in relation to children’s motor skills, (risky) play, nature and personal and social development according to kindergarten environment. Based on the interviews and the observations of the preschool teachers, the outdoor environment promoted motor skills, social and personal competences of the children. They used their body in a versatile way and the body was challenged in relation to the forest's diverse opportunities for developing motor skills. Compared to the conventional kindergarten environment, which had more limited possibilities, the outdoor kindergarten environment challenged the children and created opportunities to dare and try new challenges. Risky play in the forest can help create new and different play possibilities in relation to children's personal, motor, and social development. In addition, the results showed that play in the outdoor environment stimulated the imagination and immersion. Also, the preschool teacher’s physical participation required professional-personal competences. Engaging in physical activity gives the preschool teachers new opportunities for bringing their own physicality in play through planning and participation in the play in the forest environment (Mikkelsen, 2011).

Ad. 1. What can the body do? Motor skills in the forest

Physical activity and movement have been associated with children's motor skills and fundamental physical capabilities (Lubans et. al., 2010). Studies have shown that the number of children with sub-optimal development of motor skills are increasing. Physical activity and movement are also strongly associated with children's motor development and fundamental

movement skills. Unfortunately, some children do not develop their motor skills and fundamental movement skills in relation to their potential. Internationally, it has been shown that the number of children with suboptimal development of motor skills is increasing. Between 5% and 15% of all children have such major motor challenges at the start of school that it affects their schooling both physically, socially and academically. The motor challenges have an impact on the children's quality of life and they have an increased risk of poor mental and physical health both now and later in life (Lubans et. al. 2010, Lima et. al. 2017, Zwicher et. al. (2012A, 2012B), Karras et. al. 2019, Lingam et. al. 2012, Vlahov et. al. 2014, Engel et. al. 2018, Cattuzzo et. al. 2014).

Gross motor activities and basic skills such as running, jumping, throwing, climbing, crawling, rolling, swinging and sliding prevail when children play in nature as opposed to traditional playgrounds (Fjørtoft, 2000). Also, the structures such as steep slopes, uneven terrain and trees provided games such as climbing, sliding, running games and balance games. Further, preschoolers considered traditional playgrounds to be more boring than natural environments (Fjørtoft, 2000). This supports the assumption by Gibson (1979) that a natural environment provides more intense and varied physical activity than a standardized playground (Gibson, 1979).

Based on the observations and interviews in this present study, the children developed motor skills when playing in the outdoor kindergarten environment. They used their body in a versatile way and the body was challenged in relation to the forest's diverse opportunities for developing motor skills in contrast to the more limited possibilities of expression on the playground. In the forest, the body is more free. Children have the freedom to choose bodily activities that require and correspond to their motor development. This can be seen in relation to the flow theory (Csikszentmihalyi, 2002). When the challenges are at the top end of the flow scale, children are optimally challenged and there is a high degree of development and learning in the children (Knoop 2004). The preschool teachers talked about the importance of helping the children to challenge themselves – they were 'ready with a helping hand'.

In the forest there are always new opportunities and challenges that the children can explore, immerse themselves in, seek boundaries through, etc. Whereas the conventional

kindergarten environment and the playground are well known to the children, and thus fewer new challenges. Therefore, the preschool teachers experienced that the children partly immersed and challenged themselves more. Previous studies also show that children seek the places where they can be challenged bodily and suspensefully (Hagen, 2015, Waters, 2017).

The preschool teachers must work on daring to give the children the space needed to explore their own physical possibilities in a versatile terrain. With support if needed of course. As one of the preschool teachers said in relation to the children's ability to feel their own physical capabilities: *"Wait, I can actually do this. I've just come too far out. I'm going to go back"*.

Ad. 2. At the limit – risky play

Parents, professionals, and society in general have an interest in giving all children the best circumstances for a good upbringing by enhancing resilience, physical and mental health among the children (Kvelling, 2016, Obel & Poulsen, 2019). By working with risky play, preschool teachers can contribute to supporting and creating resilience in children, while countering the apparent culture of being too careful, which has emerged in the pedagogical practice (Sandseter & Kennair, 2011, Lykkegaard, 2015). By empowering children to manage their own risks in a controlled environment, they can learn vital skills and gain the experience needed to face the complexity and unpredictability of the world (Gill 2007).

Taking risks can further have a positive consequence in relation to children's motor skills, social and emotional development, combined with their general health (Gill, 2007; Gleave, 2008; Sandseter, 2015, Sederberg & Bahrenscheer, 2018). Risk filled play revolves around activities, where the children balance on the limit of control. The play becomes exciting because there is a risk and fear of the unknown. Children participate in risky games, because they get a sensation of joy, excitement, fear, trepidation, pride, and believing in yourself. (Dweck 2000, Lykkegaard, 2015, Sandseter, 2010, 2015).

Risky play can help create new and different play possibilities. The focus must be on what risky play can accomplish, and so it is about creating frameworks, norms, and values for the work of risky play in the kindergartens. Our observations showed that risky play often took place in

communities of practice where the children learned to read the situation and cooperate with each other to cope with the physical challenges.

In a previous study, we also identified the importance of the role of educators in helping children in their motor (and personal and social) development – especially through risky play. A preschool teacher said: *"First, I think you should have that security with you, then you both towards yourself but also of course towards the children, so you express that there is someone here who has it under control. So they have a safe environment in which they can challenge themselves (...) and then I think you have to want it (...) and then it also requires some knowledge (...) So knowledge, security and the will must be there – I think it's difficult to set a safe environment for the children if you're not comfortable with it yourself."* (Sederberg & Bahrenscheer, 2018).

It seems like that the outdoor kindergarten environment challenged the children in another way and created opportunities to dare to try new challenges that they may not have dared at the conventional kindergarten environment in the safe surroundings of the playground. Therefore, it is important that preschool teachers are aware of the new opportunities that may arise within the universe of risk filled play.

Ad. 3. Immersion and imagination

Research has shown that the motivation for physical activity and movement is highly related to the children's experiences of joy of movement, and the development of their sense of the body and motor skills in the unions that children engage in (Koch, 2013; Nørgaard & Jensen, 2020; Tanggard, Matthiesen, & Cavada, 2020). Thus, the focus of movement and body activities in the pedagogical practice is important (Merleau-Ponty, 1994; Rasmussen, 2020; Rønholt & Peitersen, 2014).

This study showed that the outdoor kindergarten environment contributed to development of childhood imagination, whereas the rules and routines of the playground could be a limiting factor for the imagination and the physical challenges. Furthermore, the empirical evidence showed that playground toys and play equipment keep children in the same play patterns and -roles with significance for their imagination and immersion, which is also supported by other

research (Knoop, 2004). This shows the importance of creating opportunities for children's active participation and co-determination in their play in the context of the environment's framework and opportunities.

At the same time, there was a special sense of immersion in the outdoor kindergarten environment thereby the preschool teachers were better at giving the children time to immerse in long creative games, compared to when in the conventional kindergarten environment, where e.g., the scheduled breaks dictated the agenda of the day. This is supported by other research showing that the shapes, colors, scents and sounds of the forest provide special sensuous qualities with significance for inner peace and enjoyable being (Kaplan & Kaplan 1989).

This study furthermore showed that there were much less conflicts in the outdoor kindergarten environment than at the conventional kindergarten environment, which in part can be attributed to the large outdoor area but can also be related to more relaxed preschool teachers and their approach to the play of the children when in the outdoor kindergarten environment.

Ad. 4 The preschool teacher as a physical participant

When preschool teachers are meeting a child in physical activities and play, including risk filled play, it is important that they have courage, want to, and will to meet the children as professional adults, and this professionalism is related to the personality and the body (Winther, 2012). Professional-personal competency is a connection between the personal, the professional, and the body. The body is seen in a phenomenological perspective as our basic condition of existence and ever present, also in the professional meeting (Winther, 2012).

According to Winther it requires practice to get the three dimensions (person, body, and profession) to support each other, and is very much dependent on learning the signals of your own body. The professional/personal competency contains of contact with self, communication & social contact and leadership of a group or situation (Winther 2012).

To have professional/personal competency is thus about being in contact with one's own body and knowing its signals and expressions, as well as being able to read others verbal and non-

verbal expressions. Furthermore, it is required to be able to create a space, dare to be on the spot and be physically, professionally, and personally present in that space (Winther, 2012).

If the preschool teacher e.g., signals with their body language it is dangerous what the child is doing, it can influence the children's courage and willingness to challenge themselves. It is called "the professional-personal competency", the part where the body language is an important part of the preschool teacher's professionalism (Winther, 2012). It is important to become aware of and perhaps challenge the norms and values of the kindergartens by working with physical activity and the preschool teachers' physical actions and participation.

It became obvious in the results of this study that the play of the children was diminished if the preschool teachers interacted and limited the physical activity of the children. By working actively with one's own professional-personal competencies as well as didactic reflection in collaboration with colleagues, this project has shed light on the fact that the body is an important part in the interaction with the children. Another study shows – in connection with this point – that children's physical activity levels increase if the preschool teachers are active with the children (Mikkelsen, 2011). This shows the importance of the preschool teachers active, bodily participation in children's play.

Methodological considerations

When using observations and interviews as methods, there are both advantages and disadvantages. One of the positive aspects of using observations is to observe the direct behavior of the participants, by observing the individual's actions in the given situation, it is not possible to lie about the observed behavior. However, by observation as a method, it is not possible to question the observed and its motives for action, therefore it is advantageous to combine observations with qualitative interviews. Finally, the behavior of the observed individual can be influenced if the person is aware of the observer, which can lead to uncertainty regarding the data (Agerup, 2015).

The observations of children and the preschool teachers were made prior to the interviews, partly to get the opportunity to 'get to know the field' and get into the target group in more detail and partly to select interviewees based on the observations. The observations could

thus be used to exemplify various key themes that we wanted to get around in the interviews. By conducting observations prior to interviewing, it became possible to gain a different and better insight into the group of children and their interaction among themselves.

By using interviews, we gained insight into the interviewees' life as well as a snapshot of their understandings and experiences. We gained a deeper understanding from a smaller, selected group. It was an advantage that we followed the same people both in the outdoor kindergarten environment and in the conventional kindergarten environment, to get their thoughts and reflections across the two environments. Conversely, a representative picture of the field is not gained by using qualitative semi structured interviews (Kvale & Brinkmann, 2015).

Conclusion

Through the preschool teachers' reflections and thoughts as well as observations of the children's play and the preschool teacher's actions, this study gives a number of suggestions on what the outdoor kindergarten and forest environment as a pedagogical framework can offer in relation to children's mental and physical health. Especially with a focus on motor skills, risky play, contemplation, and the bodily participation of the preschool teachers. The empirical evidence and the analyses of the research project showed that the preschool teachers highlighted the forest as a very valuable pedagogical "space" that provided space for special developmental opportunities for the children, which was not possible in the same way in the conventional kindergarten environment. There was more the opportunity for immersion and versatility in the children's play as well as more opportunities to challenge themselves – both motor and mentally with an impact on their physical, personal and social development. Likewise, the study showed that the preschool teachers participated more actively in the children's play in the outdoor kindergarten environment, but at the same time, the study also showed that there was an opportunity for the children to have space and possibilities for immerse themselves without the adults. Thus, it was a balance between engaging as an adult, but at the same time letting the children immerse themselves in their own play, and here it is important, as a preschool teacher, to be aware of the children's prerequisites and ability to participate in the activities. This was seen both in the conventional kindergartens and in the forest, but in the forest, there was a greater participation from the

preschool teachers in the physical and bodily games – with significance for both the children's and the preschool teacher's involvement.

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Conflicts of interest

The authors have no conflicts of interest to declare.

References

- Agerup, L. (2015): *Pædagogens undersøgelsesmetoder*, Hans Reitzels Forlag
- Bleses, D., Jensen, P., Nielsen, H., Sehested, K. & Madsen, N. (2016): *Børns tidlige udvikling og læring. Målgrupperapport*. (2016).
- Brockman, R, Jago, R and Fox, KR (2011) '*Children's active play: self-reported motivators, barriers and facilitators*', BMC Public Health, 11, 7. Available online at: <http://www.biomedcentral.com/1471-2458/11/461> (Accessed november 2011).
- Cattuzzo, M. *et al.* (2014): *Motor competence and health related physical fitness in youth: A systematic review*. J. Sci. Med. Sport 19, 123–129.
- Czikzentmihalyi, M. (2002): *Flow, The Psychology of Happiness*, Ebury Publishing.
- Chen, H., Cohn, E. S., Chen, H. & Cohn, E. S. (2009): *Physical & Occupational Therapy In Pediatrics Social Participation for Children with Developmental Coordination Disorder Conceptual , Evaluation and Intervention Considerations Social Participation for Children with Developmental Coordination Disorder* : C. 2638.
- Database OF. PF3.2: Enrolment in childcare and pre-school. 2021.
- Dicicco-Bloom B, Crabtree BF (2006): The qualitative research interview. Med Educ. 40(4):314-321.
- Education MoCa (2020). The strengthened pedagogical curriculum, Framework and content. Ministry of Children and Education; 2020.

- Engel, A. C., Broderick, C. R., van Doorn, N., Hardy, L. L. & Parmenter, B. J. (2018): *Exploring the Relationship Between Fundamental Motor Skill Interventions and Physical Activity Levels in Children: A Systematic Review and Meta-analysis*. Sports Medicine doi:10.1007/s40279-018-0923-3.
- EVA (2020), Danmarks Evaluerings Institut. *Læringsmiljø i kommunale børnehaver*. <https://www.eva.dk/dagtilbud-boern/laeringsmiljoe-kommunale-boernehaver>.
- Fjørtoft, I. and Sageie, J. (2000): *The natural environment as a playground for children: landscape description and analyses of a natural playscape*. Landscape and Urban Planning, 48 (1–2), 83–97.
- Fjørtoft I (2001) *The Natural Environment as a Playground for Children: The Impact of Outdoor Paly Activities in Pre-Primary School Children*. Early Childhood Education Journal 29 (2). doi:1082-3301/01/1200-0111\$19.50/0
- Gibson, J.J. (1979): *The ecological approach to visual perception*. Boston, MA: Cornell University/Houghton Mifflin.
- Gill, T. (2007) *No Fear: Growing up in a risk averse society*. London: Calouste Gulbenkian Foundation.
- Gleave, J. (2008): *Risk and play, A literature Review*, www. Playday.org.uk
- Grahn, P. et. al. (1997) "Ute på dagis", Movin, Stad og land no. 145.
- Grahn, P. et. al. (2000): "Børns udeleg", København: Forlaget Børn og unge.
- Hagen, T.L. (2015). Hvilken innvirkning har barnehagens fysiske utemiljø på barns lek og de ansattes pedagogiske praksis i uterommet. *Nordic Early Childhood Education Research Journal*, 10 (5), 1-16. <https://doi.org/10.7577/nbf.1430>
- Hastrup, K., Tjørnhøj-Thomsen, T. (2011) *Kulturanalyse - kort fortalt*, vol 1. Samfundslitteratur, Frederiksberg
- Hemmings, P (2007) 'Renegotiating the primary school: Children's emotional geographies of sport, exercise and active play', *Children's Geographies*, 5, 353–371
- Kaplan, R. og S. (1998) "The experience of nature". USA; Cambridge University Press.
- Karras, H. C., Morin, D. N., Gill, K. & Izadi-najafabadi, S. (2019): *Research in Developmental Disabilities Health-related quality of life of children with Developmental Coordination Disorder*. Res. Dev. Disabil. **84**, 85–95.
- Koch, A. B. (2013): *Når børn trives i børnehaven*. Ph.d-afhandling. Aarhus. Forlaget Systime.

- Knoop, H. H. (2004): "Kunsten at finde flow i en verden, der ofte forhindrer det", Kognition & Pædagogik, no. 52, 2004.
- Kvale & Brinkmann (2015): *Interview, det kvalitative forskningsinterview som håndværk*, København, 3. udgave, Hans Reitzels Forlag
- Kvillo, Ø. (2016): *Børn i risiko*. Samfundslitteratur
- Lima, R. A. et al. (2017): *Physical activity and motor competence present a positive reciprocal longitudinal relationship across childhood and early adolescence. J. Phys. Act. Heal.* 14, (2017).
- Lingam, R. et al. (2012): *Mental health difficulties in children with developmental coordination disorder. Pediatrics* 129.
- Lubans DR, Morgan PJ, Cliff DP, Barnett LM, Okely AD (2010) "Fundamental movement skills in children and adolescents: review of associated health benefits". *Sports medicine (Auckland, NZ)* 40 (12):1019-1035. doi:10.2165/11536850-000000000-00000
- Lykkegaard, Martin (2015): *Kamp, leg og slåskultur*, I: Jensen, Jens-Ole og Sandseter, Ellen Beate
- Merleau-Ponty, m. (1994): "Kroppens fænomenologi", Frederiskberg, Det lille Forlag.
- Mikkelsen BE (2011). Associations between pedagogues attitudes, praxis and policy in relation to physical activity of children in kindergarten--results from a cross sectional study of health behaviour amongst Danish pre-school children. *Int J Pediatr Obes.* 2011;6 Suppl 2:12-5.
- Nørsgaard F. & Jensen, J.O. (2020): "Bevægelse og eksistentiel læring i børnehaven" I Lund, O. & Jensen, J.O. "Sans for bevægelse – livsnerven i pædagogisk arbejde", København, Hans Reitzels Forlag
- Obel, C. og Poulsen, S. H. (2019): "En 360 graders tilgang til børns trivsel" I Sederberg, M. og Stolpe, M. N. "Børn og unges trivsel – et tværprofessionelt ansvar", København, Hans Reitzels Forlag.
- Rasmussen, T. H. (2020): "Leg. Et fænomen i bevægelse" " I Lund, O. & Jensen, J.O. "Sans for bevægelse – livsnerven i pædagogisk arbejde", København, Hans Reitzels Forlag
- Rønholt, H. & Peitersen, B. (2014): "Idrætsundervisning – en grundbog i idrætsdidaktik", København, Museum Tusulanums Forlag.

- Sandseter, E.B.H. (2010). *Scaryfunny. A qualitative study of risky play among preschool children*. (Doctoral thesis), Norges Teknisk-Naturvitenskapelige universitet. Trondheim. Retrieved from <https://ntnuopen.ntnu.no/ntnu-xmlui/handle/11250/270413>
- Sandseter, E. B. H. (2015): *Boblende glæde og et sug i maven: risikofylt leg i daginstitutionen*, I: Jensen, Jens-Ole og Sandseter, Ellen Beate Hansen (Red.) *Vildt og farligt – om børns og unges bevægelsesleg*. Akademisk Forlag
- Sandseter, E. B. H. og Kennair, L. E. O. (2011): *Children's risky play from an evolutionary perspective: The anti-phobic effects of thrilling experiences*. *Evolutionary Psychology*, 9 (2), 257-284.
- Sederberg, M. og Bahrenscheer, A (2018): "Pædagogers mod og kropslighed i risikofylt leg", *MOV:E*, no. 6, 2018
- Sønnichsen L. Det pædagogiske arbejde med børns bevægelse i daginstitutionens uderum om opmærksomhedspunkter i dialogen om udviklingen af en aktiv nærværende pædagogik. *Barn*. 2017:41-
- Tanggard, L., Matthiesen, N. og Cavada, P. (2020): "Kropslige og bevægelsesmæssige læreprocesser i børnehaven" I Lund, O. & Jensen, J.O. "Sans for bevægelse – livsnerven i pædagogisk arbejde", København, Hans Reitzels Forlag
- Vigsø BN; (2006) *Børn og Udeliv*, vol 1. CVU Vest Press, Esbjerg, DK
- Vlahov, E. & et Al. (2014): *Preschool motor development predicting high school health-related physical fitness: a prospective study*. *Percept. Mot. Skills* 119.
- Waters, J. (2017). *Affordance Theory in Outdoor Play*. In T. Waller, E. Ärlemalm-Hagsér, E.B.H. Sandseter, L- Lee-Hammond, K. Lekies & S. Wyer (Eds). *The Sage Handbook of Outdoor Play and Learning* (pp 40-54). London: Sage publications Ltd
- Winther, H. (2012): *Kroppens sprog i professionel praksis*, Værløse, Billesøe & Baltzer.
- Zwicker, J. G., Missiuna, C., Harris, S. R. & Boyd, L. A. (2012A): *Review article Developmental coordination disorder : A review and update*. *Eur. J. Paediatr. Neurol.* **16**, 573–581
- Zwicker, J., Harris, S. & Klassen, A. Child (2012B): *Quality of life domains affected in children with developmental coordination disorder : a systematic review*. *Child Care Heal. Dev*, doi:10.1111/j.1365-2214.2012.01379.x.