Journal of Trainee Teacher Education Research

Exploring whether gender affects pupils' perspectives on outdoor learning

Jeff Beh

(PGCE Early Primary, 2019-2020)

Abstract

Currently, research examining gender and pupils' voices within a nature-based setting is limited (Harris, 2018; Trapasso et al., 2018). As a result, the present study sought to investigate whether gender has an influence on children's learning during Forest School (FS) sessions. Subsequently, a mixed-methods approach, using a modified version of the Mosaic approach (Clark & Statham, 2005), was implemented to obtain data from four pupils in a reception class. The findings from this paper suggests that: (1) nature-based learning is valuable for young learners, (2) outdoor learning can help with social skills, and (3) an awareness of gender can develop in the early years. Consequently, the results support previous research (Bento & Dias, 2017; Coates & Pimlott-Wilson, 2019; Maynard & Waters, 2007) which indicate that learning in an outdoor setting, including FS, can lead to a plethora of benefits for young children.

Exploring whether gender affects pupils' perspectives on outdoor learning

Jeff Beh

Introduction

Within the past two decades, the topics of learning through outdoor play and gender have generated extensive discussions amongst educators, policymakers, and researchers (Bento & Dias, 2017; Bilton & Waters, 2016; Clements, 2004; Coates & Pimlott-Wilson, 2019; Martin, 2011; Muñoz, 2009). Today, many researchers advocate that outdoor play in natural settings, such as Forest Schools (FS), can support children's learning and development (Coates & Pimlott-Wilson, 2019; Maynard, 2007; O'Brien, 2009). For instance, young learners can cooperate with each other to build and strengthen their social competence (Bento & Dias, 2017; BERA, 2018; Harper, 2017; Little & Wyver, 2008). As a result, the natural environment can promote one's independence, self-esteem, and physical abilities in a less restricted and freer environment (Barrable & Arvanitis, 2019; Harris, 2017, 2018).

With regards to gender, research indicates that young children are aware of such differences due to a range of environmental factors, including role models, television, and play (Martin & Ruble, 2010; Neto & Furnham, 2005; Wingrave, 2018). As a result, stereotypical gender patterns can be observed in the school environment, particularly in the playground where boys are more likely to engage in active games, whilst girls show a preference for sedentary activities (Blakemore & Centers, 2005; Reimers, Schoeppe, Demetriou, & Knapp, 2018). Therefore, the dimorphic treatment of both boys and girls can be harmful as some children may conform to these social expectations during their childhood or later in life (Wingrave, 2018).

Accordingly, the current study aims to explore whether gender affects pupils' perspectives on outdoor learning, particularly since the literature on children's voices is limited (Murray, 2019).

Literature Review

Value of outdoor play in natural settings

Play can be defined as an activity which is "meaningful, intrinsically motivating, pleasurable, freely chosen, symbolic, actively engaging, and opportunistic." (Chakravarthi, 2009, p.25). Correspondingly, many children learn through play (Little & Wyver, 2008; Vogt, Hauser, Stebler, Rechsteiner, & Urech, 2018).

A large body of research indicates that play, particularly outdoor play, is an integral component of experiential learning which meets and furthers the physical, cognitive, social, and emotional needs of young learners (Bento & Dias, 2017; Coates & Pimlott-Wilson, 2019; Dowdell, Gray, & Malone, 2011; Kolb, 1984; Maynard, 2007). Outdoor play includes traditional spaces, such as school playgrounds and green spaces, including local community areas, parks, and FS. According to Zink and Burrows (2008, p.255), outdoor play is "that which is beyond the walls of the indoors", instilling excitement and a love of learning for all (Harris, 2017).

Although outdoor play can facilitate children's learning and development, a spectrum of factors have prevented them from exploring the setting, including limited spaces, parental control, living in a culture of fear, an increasing range of indoor activities, and a focus on acquiring academic skills during the early years (Clements, 2004; Ridgers, Knowles, & Sayers, 2012; O'Brien & Weldon, 2007). Other determinants involving culture, policy, behaviour management, and the educator's perception of learning through play can also affect the approach from being practised (Little & Wyver, 2008; O'Brien, 2009). Thus, even though outdoor play can assist in an individual's learning, a myriad of factors, such as child safety concerns (i.e., running off unsupervised), prevent children the freedom to explore these spaces. Subsequently, these aspects hinder the practice of outdoor play in early childhood since some adults, including guardians and educators, consider the natural environment (1) worrying, (2) risky, and (3) stressful (Harper, 2017; Leather, 2016). As a result, some parents, primary caregivers, and educators may restrict children from participating in outdoor play.

Nevertheless, outdoor play is fundamental and innate for young learners, supporting their learning, wellbeing, and development throughout early childhood (Bento & Dias, 2017). For instance, childhood obesity has been steeply rising not only in Britain, but on a global scale within the past decade (Agha & Agha, 2017; Rees, Oliver, Woodman, & Thomas, 2011). As a result, some

researchers have recommended that outdoor play, in a natural setting, should be regularly exercised to help combat the trend (Ansari, Pettit, & Gershoff, 2015; Bento & Dias, 2017; Ebbeling, Pawlak, & Ludwig, 2002). Accordingly, outdoor play supports children to develop their fine motor skills, increase their brain function, and improve their muscle, bone, and joint health (Fjørtoft, 2001, 2004; Kemple, Oh, Kenney, & Smith-Bonahue, 2016; Little & Wyver, 2008).

Forest Schools

Through observing the physical benefits of outdoor play for children, research also reflects upon the cognitive effects. For example, in a natural environment, such as a Forest School (FS), children are encouraged to be curious and explore their surroundings. According to Murray and O'Brien (2005, p.11), FS is "an inspirational process that offers children, young people and adults regular opportunities to achieve, and develop confidence and self-esteem through hands-on learning experiences in a woodland environment." The concept of FS was inspired by the Scandinavian curriculum which advocated that outdoor play is essential for young children's learning, in addition to their physical, cognitive, and emotional development (Bentsen & Jensen 2012). Subsequently, current evidence suggests that FS provide invaluable experiences for the early years since it offers young learners a range of benefits (Harper, 2017; Little & Wyver, 2008). For instance, O'Brien (2009) reported that children who participated in FS experienced an increase in improved physical motor skills, motivation, independence, self-confidence, and self-esteem.

Nonetheless, Storli and Hagen (2010) stated that young learners did not demonstrate higher levels of physical activity in a natural environment. Additionally, Leather (2016), Waite (2011), and Wood (2013) argue that a key issue which persists in FS is demonstrating to professionals how children are learning in such a playful environment. Consequently, although the majority of studies support children accessing FS, some educators are cautious about practising the model due to their scepticism on the physical benefits of the natural setting (Austin et al., 2016; Leather, 2016; O'Brien, 2009). However, the physical benefits are not the principle outcomes of FS; rather, the model has been lauded for fostering hands-on, inquiry-based learning (Coates & Pimlott-Wilson, 2019; O'Brien, 2009; Wood, 2017).

In FS, children are given the opportunity to pursue areas which interest them, enabling a natural love of learning, whilst also adhering to National Curriculum requirements (Department of Education, 2018; Dowdell et al., 2011). Maynard (2007) indicates that FS can lead children to engage in a range

of activities which benefit their cognitive, linguistic, and social needs. For example, the researcher states that learners may listen and respond to stories shared by other children in the green space, which can enhance their communication skills. Additionally, Butwright, Falch-Lovesey, and Lord (2007) report that FS activities, such as woodwork, can facilitate literacy engagement in boys. Thus, FS may benefit boys more since the communication skills of girls tend to be more advanced than the former in the early years (Leaper, Anderson, & Sanders, 1998; Leeb & Rejskind, 2004; Meland & Kaltvedt, 2017). In relation, Turtle, Convery, and Convery (2015) state that interacting and playing with other children in FS not only promotes language, but also integrate subjects encapsulated within the National Curriculum since children have more opportunities to engage with mathematical and scientific concepts. For instance, in regard to the former, mathematical concepts, such as counting and exploring the shape of pinecones, leaves, and trees, can be observed in the natural setting (Bento & Dias, 2017; Department of Education, 2018; O'Brien & Murray, 2007). Therefore, outdoor provision can support children's holistic development, whilst also promoting independence, responsibility, and a more child-centred environment (Bento and Dias, 2017; Coates & Pimlott-Wilson, 2019; Dillon & Dickie, 2012; Harris, 2017). The next section will highlight the importance of gender and outdoor play within a FS setting.

Gender

Gender can be defined as "a social, rather than a biological construct, and varies with the roles, norms and values of a given society or era" (Phillips, 2005, p.1). Most children form a gender identity during early childhood, with boys and girls being the most common identities (Martin & Ruble, 2010; Meland & Kaltvedt, 2017). Gender is constructed through relationships with peers, adults, and their socio-cultural context which can be expressed in numerous ways (Browne, 2004; Davies, 2003; Gray, 2011). Regarding the literature discussed thus far, some studies highlight a gender divide in how boys and girls play and engage with others in nature (Martin & Ruble, 2010; Trapasso et al., 2018). For example, Brockman, Fox, and Jago (2011) indicate that primary age school children label certain parts of the outdoors as "boy spaces", whereas "girl spaces" were not identified. As a result, empirical research suggests that boys and girls express themselves in different ways, such as choosing to engage in different play areas and activities (Davies & Hamilton, 2018; Muñoz, 2009; Trapasso et al., 2018).

Karsten (2003) states that the two genders differ in terms of their play behaviour and physical activity levels. The researcher indicated that boys tend to be more physically active than girls in both

traditional and natural spaces. In relation to the abovementioned study, boys tend to engage in more fantasy play than girls in natural spaces, often role-playing as superheroes; this particular act generally involves a considerable amount of running and chasing (Änggård, 2011; Fjørtoft 2001; 2004; Maynard & Waters, 2007; Waller, 2010).

However, Lovell (2009) found that girls' physical activity levels increased significantly when they were in a natural environment. Other findings related to gender were described by Ärlemalm-Hagsér (2010), who reported two key themes from her study. The researcher reported that: (1) compared to boys, girls received less attention from early years professionals, and (2) both genders were defined and treated by the professionals' traditional views of masculinity and femininity (i.e., providing trucks for boys and dolls for girls). Therefore, gender-based expectations may act as guidelines which lead children to position themselves as boys and girls (Ärlemalm-Hagsér, 2010; Hellman and Heikkilä, 2014). Correspondingly, practitioners may treat boys and girls in conventional ways within the early years setting (MacNaughton, 2006).

Despite the influences of role models, it is crucial to note that many boys and girls do challenge or do not conform to the identified stereotypes (Ärlemalm-Hagsér, 2010). In comparison to a primary-school setting, research, examining children in the early years, has indicated that gender differences are either minimal or non-existent (Gray, 2011; Waller, 2010). To illustrate, Flannigan and Dietze (2012) observed both boys and girls, within an early year's context, playing together outdoors consistently, across many episodes, and with loose parts. The researchers stated that discourse of gender differences did not occur between the two genders. Moreover, the findings reported that boys regularly engage in pretend play, including role-playing "house" and "family", which may be viewed more often in the play of girls (Boxberger & Reimers, 2019; Flannigan & Dietze, 2012). Subsequently, the children in the study never told their peers they could not play with them because of their gender. Hence, outdoor provision can also create an environment to enable gender equal play. As a result, FS sessions seem to aid in breaking down traditional relationships between gender, education, and play, and ergo, allows learning through play to be more gender-neutral. Accordingly, the current study aims to explore whether gender affects children's view of outdoor learning within a FS setting.

Following the literature on outdoor play, learning in FS, and gender, the next section will detail the methodology of this paper.

Methodology

Research design

The current study adopted a mixed-methods approach, based on the Mosaic approach (Clark & Moss, 2001). As represented in Table 1, the Mosaic approach includes observations, questionnaires, semi-structured interviews, and drawings to seek "the voice of the child" (Clark & Statham, 2005; Statham, p.29).

Method	Comments
Observations	Qualitative accounts of the pupils
Drawings	Children's drawings of learning through outdoor play in the Forest School (FS)
Questionnaires	Structured questions about the FS and classroom
Semi-structured interviews	Semi-structured interviews conducted with children on a one-to-one basis

Table 1: Methods of the Mosaic approach adapted from Clark and Statham (2005)

The multi-method approach represents piecing information together to understand the child's world, both individually and collectively, and ergo, creates the mosaic (Clark, 2001, 2005). Subsequently, it allows a range of data to be cross-referenced (Zohrabi, 2013). The Mosaic approach intends to understand pupils' perspectives via a three-stage process (Clark & Moss, 2001; Clark & Moss, 2005). The first stage involves gathering data using research tools, such as observations, child conferencing, drawings, map-making, and role-playing; the second stage is collating the information for interpretation, discussion, and reflection. Lastly, the third stage uses the data to facilitate decision making (Greenfield, 2011). Respectively, the Mosaic approach permits varied communication and enables triangulation of the data to improve the study's internal validity (Mason, 2006; Robson, 2002).

An advantage of using the Mosaic method is that researchers can assemble information from a range of participatory tools which were chosen by the children (Anderson, 2012). Therefore, by constructing the mosaic from various data collection tools (i.e., drawings and map-making), researchers can develop higher-quality interpretations from children's responses (Anderson, 2012). Consequently, some researchers support the multi-method framework for being "participatory, reflective, adaptive and focused on children's lived experiences" (Greenfield, 2011, p.110). As a

result, the researchers are considered participants and children are viewed as social and cultural co-researchers (Anderson, 2012; Harcourt & Johanna, 2011).

Pupil sample

A small-scale research was conducted in a coeducational, two-form entry, state primary school, situated in north Cambridge. The school caters for children between the ages of four to 11. Predominantly, pupils in this school are white British. Many of the pupils' parents or primary caregivers work at the University of Cambridge and in STEM industries, creating a large proportion of the local area. Since 2014, OFSTED has rated the school as 'Good'.

During my placement at this school, I carried out my study with a small group of children in a Reception class. Opportunity sampling was used to recruit children for the research, and thus, individuals were selected based on convenience. However, this particular sampling method is not representative of the target population, often producing a biased sample (Robinson, 2014).

Informed consent was obtained from four children in a Reception class, two boys and two girls, and from their primary caregivers. The four children's names are (1) Benny, (2) Blake, (3) Agnetha, and (4) Anni-Frid. Pseudonyms are used throughout the paper to ensure anonymity.

Although the sample size was small, I ensured that the selection was balanced in terms of gender. Additionally, to minimise the effects of age, all pupils in the study had recently turned five years old. Regarding attainment levels, all pupils were working at the expected level or achieving higher in both phonics and mathematics.

Observations and drawings

Pieces of the mosaic were collected from three weekly FS sessions, which allowed me to familiarise myself with the children, their routines, and the natural environment. Observations were conducted throughout the three sessions, which included seeing how participants behaved and communicated, and ergo, provided more insight regarding their thought processes (Coates & Coates, 2006).

During the first FS session, children were invited to draw a picture of the FS. Children received a clipboard, paper, and pencil to mark their drawing, which represented their views, and thus, allowed them to create their narrative (Clark & Statham, 2005; Waller & Bitou, 2011). Research suggests that

drawing allows young pupils to create a symbolic narrative of their environment, rather than rely on written or spoken communication (Adderley et al., 2015; Clark & Moss, 2001). Hence, drawing has been supported by many researchers as the visuals can prompt and facilitate more child-led discussions, enabling the individual to indicate what is important to them (Clark & Statham, 2005). As a result, the power difference in a student-teacher relationship is reduced (Clark & Moss, 2001; Clark & Statham, 2005).

Questionnaires

According to Slattery et al., (2011), questionnaires can be quick and economical in providing an overview of children's opinions. Additionally, as questions or statements are standardised, questionnaires can be replicated, and therefore, checked for reliability by other individuals (Boynton & Greenhalgh, 2004; Slattery et al., 2011).

In the second FS session, each of the four students were invited to answer a structured questionnaire, consisting of five statements: (1) *I like Forest School.*, (2) *Forest School helps me to learn.*, (3) *I learn more in Forest School than I do in the classroom.*, (4) *I would like more lessons in the Forest School.*, and (5) *I like being in Forest School more than the classroom*. On the questionnaires, pupils rated the extent to which they agreed or disagreed with a series of statements about the FS on a five-point Likert scale (Likert, 1932). To make the questionnaire more accessible for five-year-old learners, each of the boxes included faces which represented different emotions. All of the statements on the questionnaire were read aloud to the children. After each statement was read, students would circle the face they most agreed with.

For my third and final FS session, children were asked to participate in individual, semi-structured interviews.

Semi-structured interviews

In the current research, structured interviews were avoided. Alternatively, semi-structured interviews, involving a series of both open-ended and closed-ended questions were carried out with each child in the third FS session. All four learners are familiar with the environment, and ergo, the natural setting assisted them in feeling more at ease to answer the questions (Clark & Moss, 2001, 2005).

Subsequently, semi-structured interviews allowed me to ask questions which were planned, but also permitted flexibility to extend the children's answers, if they so wished.

Research indicates that semi-structured interviews can provide in-depth data analysis and more genuine insights into children's perspectives (Clark, 2010a; Gill, Stewart, Treasure, & Chadwick, 2008). For instance, Clark (2010a) highlights how questions which begin with, "Tell me about", would evoke more detailed responses than questions that start with, "Can". Thus, the interview consisted of asking children questions which involved telling me about: what they like about the FS, what they do not like about the FS, where they like to play in the FS, and more (Merewether & Fleet, 2014). Ultimately, children are more likely to express themselves if they feel they have control over discussions and topics (Clark, 2010a). In relation, Dockett, Einarsdottir, and Perry (2009) indicates that conversational approaches to interviews can make children feel more at ease.

After pieces of the Mosaic were obtained, all collection tools were cross-referenced with pupils to ensure their responses were accurate and representative of their views.

Ethical considerations

The research followed the University of Cambridge's Ethics in Research checklist and adhered to the British Educational Research Association's (BERA) guidelines to ensure the ethical treatment of children (BERA, 2018). Roberts-Holmes (2011, p.13) states that ethical concerns are fundamental since "all research can be potentially beneficial and inadvertently harmful". Therefore, it is of the utmost importance that the present study maintains the dignity of the children. Hence, all learners who participated in the research were ensured anonymity, confidentiality, and had the right to withdraw.

The study was approved after discussing the research with my tutor, mentor, and the headteacher. Letters were sent out to the participants' primary caregiver, which informed them about the nature of the research, sought permission of audio-recording their child, and requested for their and their child's written consent. Only students and guardians who provided documented consent were allowed to participate in the research. As consent is an ongoing process, children were reminded at various stages of the research that their participation was voluntary.

Notably, the data in the present study involved obtaining qualitative data, and therefore biased results are more likely to occur (Hood, 2006; Noble & Smith, 2015). Nevertheless, measures were taken to minimise the research bias effects, such as avoiding the use of leading questions and supporting children as co-researchers (Agee, 2009; Bradbury-Jones & Taylor, 2013).

Under the Data Protection Act (2018), all data obtained from the study will be kept safe and destroyed after the research is completed. Regarding the semi-structured interviews, children were reassured that there were no right or wrong answers. Additionally, the natural environment and time in which the sessions occurred meant that students did not miss out on whole lessons. As a result, teaching requirements and the needs of children were taken into account.

Data analysis

The data was examined using both quantitative and thematic analysis – the latter analyses qualitative data and is based on descriptive phenomenology (Braun & Clarke, 2006; Pistrang & Barker, 2010). It "is a method for identifying, analysing, and reporting patterns (themes) within data" (Braun & Clarke, 2006, p.6). The six-phase analytical process involves identifying common themes from observations, drawings, questionnaires, and interviews.

By using thematic analysis, I can identify and select key recurrent themes from the data, such as whether children consider the FS useful for their learning. Consequently, carrying out this technique allows one to build descriptive and specific themes for later analysis. Additionally, as the analysis uses raw data, it increases the internal validity of the present study (Braun & Clarke, 2006; Corbin & Strauss, 2008; Nowell, Norris, White, & Moules, 2017).

Annotations of the transcripts are detailed in the findings section. However, only relevant segments of the transcript are detailed in the findings to support the themes which emerged from the data.

Findings

Four common themes emerged from thematic analysis, which were (1) a preference for Forest School (FS), (2) learning through play, (3) teamwork, and (4) awareness of gender. These themes will be presented in the findings section of this paper. Ultimately, a theme should embody "some level of

patterned response or meaning within the data set" (Braun & Clarke, 2006, p.82). Additionally, selected quotations will be included to evidence children's responses in the next section.

A preference for Forest School

One of the four themes which emerged from data analysis was children's 'preference for Forest School'. The questionnaire responses (Table 2) indicated that all four learners enjoy being in FS more than the classroom. Additionally, the results suggested that (1) all children would like more lessons in the FS, (2) they consider the sessions helpful to their learning, and (3) they would like more lessons in the setting.

	Agnetha	Benny	Blake	Anni-Frid
I like Forest School.	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
Forest School helps me to learn.	Agree	Strongly Agree	Strongly Agree	Strongly Agree
I learn more in Forest School than I do in the classroom.	Disagree	Unsure	Disagree	Disagree
I would like more lessons in the Forest School.	Agree	Strongly Agree	Agree	Strongly Agree
I like being in Forest School more than the classroom.	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree

Table 2: Children's responses from questionnaires

However, for the third statement presented in Table 2, "I learn more in Forest School than I do in the classroom", pupils' answers were more mixed, with one saying they were unsure and the other three disagreeing that they learnt more in the natural environment compared to the classroom. (see Figure 1 next page for pictorial representation).
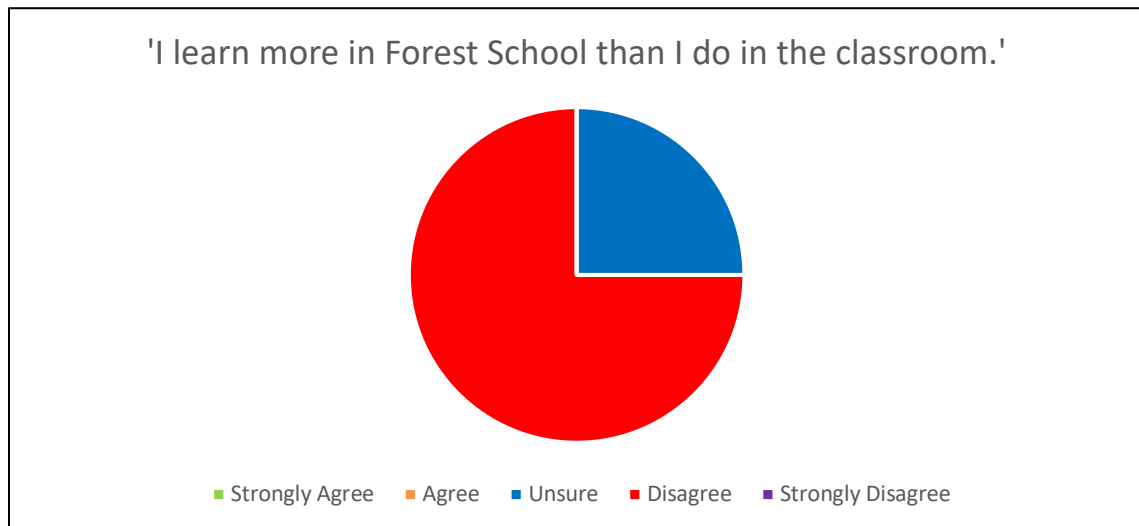
Figure 1: Children's level of agreement concerning the statement,

"I learn more in Forest School than I do in the classroom."

According to Anni-Frid, the FS is different from what she would normally experience in a school day.

> "… we do a lot of counting here [Forest School]… I can count everyone here. But I do more learning in class because we do work… because when I'm inside, we learn maths and, and… yeah, maths. And reading books, which I don't like… I think it's [Forest School] good… and, it's like, different. I get to play with my friends and learn about nature. I can fly kites and we play with worms and over there [a rope swing]."
>
> (Student quote: Anni-Frid)

Thus, students' interviews were analysed to further understand their responses.

Therefore, Anni-Frid's responses indicate that she associates reading and mathematics with traditional learning in the classroom, whilst viewing the FS as an active, fun, and free area to play and learn. In relation, this particular finding supports O'Brien (2009), who states that FS does help children to learn, even if unknowingly. For instance, Benny's interview indicates how the FS enabled him to "be with nature and my friends" whilst the classroom invoked routine and structure: "I learn more in class. Like maths and Charlie and Lola. But I do learn here in FS. It makes me feel like, like, nature… and nature and stuff. Like inside, the classroom is sometimes boring". Ergo, the findings suggest that by allowing individuals access to the FS, it can lower negative feelings one may have about the classroom. Accordingly, the natural setting can also generate an inclusive child-centred environment where all can experience a similar learning process, regardless of their background or stance on education (Barrable & Arvanitis, 2019; Coates & Pimlott-Wilson, 2019; Scott, Boyd, & Colquhoun, 2013). Ergo, although FS offers a plethora of benefits for all students, it particularly

fosters and meets the needs of a wide range of students, allowing them to feel free from traditional school activities (Brodin, 2009; Coates & Pimlott-Wilson, 2019).

Learning through outdoor play

The second theme to arise from data analysis was 'learning through outdoor play'. From the interviews, all four students mentioned "play" when talking about the FS and associated the classroom with "work". Below is a segment of the interview with Blake playing in a mud kitchen, differentiating between the two settings.

> "Um, um, um, I'm learning how to use the pot, um, to make chocolate, muddy sweets…
> Um, um, um… yeah. I don't bake here [mud pool], I bake over there [sink in the mud
> kitchen]. I made a rainbow, sparkly strawberry, can I show you? I can also show my
> friends!"
>
> (Student quote: Blake)

Therefore, the findings suggest that FS activities, such as pretend baking and cooking in a mud kitchen, are considered learning through play. Consequently, these playful activities can develop their practical skills, independence, and self-confidence (Barrable & Arvanitis, 2019; Coates & Pimlott-Wilson, 2019; Little & Wyver, 2008). Thus, playing in the FS appears to not only facilitate learning, but can also improve students' social and linguistic needs (Coates & Pimlott-Wilson, 2019; Honeyford & Boyd, 2015).

Furthermore, the FS not only provided children with a playful environment outside the classroom, the model also seemed to boost their curiosity and decision making as all four participants actively explored various parts of the setting. For instance, following one of my observations, Agnetha and Anni-Frid moved stumps around to create the interior of an aeroplane. After, both children showed excitement in their creation, as evidenced by Anni-Frid: "Look Miss, we're on an aeroplane!" Meanwhile, Blake was examining different insects in the grass and on the mud, such as counting the dots on two ladybirds he spotted. In addition, Benny was playing on the swings, but fell off as he released the rope. Next, he got back up and played on the swing again; yet this time, he remembered to hold onto the attached rope. Therefore, children's interactions in the FS indicate they learn about (1) autonomy, (2) resilience, and (3) physical risk-taking. In relation to the latter, it is crucial to note that many societies often neglect the importance of young children taking risks to aid their learning and development (Bento & Dias, 2017). Linking back to a culture of fear, many adults underestimate the capabilities of a child (Bento & Dias, 2017; Kemple et al., 2016; Muñoz, 2009). For example,

Bento and Dias (2017) state that children should have opportunities to take risks in the natural environment, such as climbing trees or using new tools. Although the likelihood of accidents is regarded as higher (Barrable & Arvanitis, 2019), children can learn more about problem-solving, self-determination, and self-knowledge through exploration and play (Stephenson, 2003). Thereby, based on existing literature, the four participants in this study may have experienced feelings of happiness and success due to associating FS with child-led play (Bento & Dias, 2017; Maller, Townsend, Pryor, Brown, & St Leger, 2006). As a result, children can apply their current knowledge within the natural setting, in addition to gaining new skills and insight from the experiential environment.

Teamwork

All four students exhibited teamwork during the FS sessions. For example, both Agnetha and Benny drew their maps together and relied on their drawings of the FS to show me around the natural setting. As a result, the FS provided these children with opportunities to collaborate and communicate with one another to achieve mutual goals – skills which may not have surfaced in the classroom. Ergo, the findings not only suggest that teamwork increased, but their literacy skills also improved.

Furthermore, due to the space and variety provided by FS, children can use the natural setting to develop joint goals and companionship with peers. Therefore, the findings from observations and interviews indicate that FS sessions not only provide more opportunities for teamwork, but they also facilitate a sense of community and belonging. Subsequently, research demonstrates that FS can decrease stress and anxiety, whilst improving health and social connections, and increasing happiness and physical risk-taking (Coates & Pimlott-Wilson, 2019; Kemple et al., 2016; O'Brien, 2009). Furthermore, FS can provide individuals with more opportunities to learn alongside their peers, as demonstrated by Benny.

> "Because every 'Muddy Monday', we come here and we can do a lot of things… Um, we can play duck, duck, goose, we can play build a tent with friends. We can… we can… we can, play with friends and the grownups… So we can play like running and catching and the mudslide. I made that tent with my best friends. It took us ages! But sometimes, I don't like it when it's too cold."
>
> (Student quote: Benny)

Thus, through play and teamwork, children are more likely to facilitate peer relationships, develop conflict resolution skills, and further understand the perspectives of others (Dowdell et al., 2011). In relation, Vygotsky (1978) notes how children learn from their environment and more knowledgeable others, such as parents, teachers or peers. Consequently, teamwork enables children to learn through

play by establishing a co-constructive climate as they can further understand the perspectives of others (Harris, 2017).

Awareness of gender

The fourth and final theme which materialised from the study was an awareness of gender. Social role theory states that gender stereotypes arise from children's environment, which includes observing the social roles of women and men in society (Eagly & Wood, 2012; Koenig & Eagly, 2014). Although teamwork was witnessed during the FS sessions, they were often between children of the same sex. For instance, during the three FS sessions, Agnetha and Anni-Frid frequently played house in the mud kitchen, role-playing a mother-daughter or sister-sister relationship. In these roles, they would reinforce stereotypical female behaviour, including the traditions of making "food for the unicorn baby" and taking "care of the chocolate babies". Anni-Frid even asked one of her peers: "I know you're a boy, but why are you making a unicorn pie?" Blakemore and Centers (2005) indicate that accompanying stereotypes dominate children's environment, such as television and popular culture. The researchers regard this as the 'hot potato effect', which suggests that by the age of five, some children are highly influenced by expectations that they tend to avoid play which is considered inappropriate for their gender (Cherney & Dempsey, 2010). Therefore, some children may display gender biases in a school setting due to gender expectations.

Moreover, during some of the FS sessions, I noted how Blake and Benny displayed play behaviours which are stereotypically associated with males, such as rough-and-tumble play, role-playing as "forest superheroes", and actively avoiding the mud kitchen, saying that, "It's for girls". Concerning these findings, Shutts, Banaji, and Spelke (2010) report that boys prefer playing and engaging with peers of their own sex. Arguably, stereotypical displayed behaviours in boys can be ascribed to gender expectations, gender roles, and socialisation, such as stereotypical masculine toys (e.g., trucks). Subsequently, exposure to gender-stereotyped models in children's lives can lead to social and gender-specific development (Signorielli, 1990; Spinner, Cameron, & Calogero, 2018).

Summary of findings

Overall, the findings reported in the current research emphasises the different effects which FS invoke. Also, the research indicates that pupils view FS as (1) a welcome change to their learning, (2) an open setting for learning, and (3) an area for teamwork. However, awareness of gender is

prevalent, even in the early years. The results suggest that when given the freedom to choose, some children are reluctant or avoid engaging in activities which are deemed undesirable for the gender they identify as. Ergo, this adds to children's stigma consciousness of stereotypical gender roles, expectations, and behaviours (Schmalz & Kerstetter, 2006).

The next section of this paper will critically discuss the methodology of the present research.

Discussion

Critical analysis of research methodology

The current study adopted a mixed-methods design, which meant that children's voices were recognised and reflected throughout the study, and which quantitative and qualitative findings could be compared (Clark & Statham, 2005; Wisdom & Creswell, 2013). Furthermore, by employing an adapted version of the Mosaic approach to carry out this study, children could not only represent themselves through speech, but also through other channels, such as drawings (Clark & Statham, 2005). To illustrate, Benny and Anni-Frid took considerable time with their drawings, carefully thinking about the different areas of the FS. Furthermore, existing literature states that pictures can be "a powerful language" (Clark & Moss, 2001, p.24) for young learners, especially for those who struggle with written and verbal communication, and individuals with speech and language delay (Clark & Moss, 2005). Therefore, the multi-method approach offers numerous participatory tools for students to select freely. Consequently, it provides children with more opportunities to articulate their ideas to others (Kershner & Pointon, 2000). Nevertheless, as the multi-method approach is vast, it can be a time-consuming process, mainly due to the complex and extensive set of data it provides for data analysis.

As individual, semi-structured interviews were one of the data collection tools, I could follow up on children's ideas or prompt them if they were hesitant about a question. For example, Blake showed hesitance during the interview, and some prompts were provided. Subsequently, using individual interviews, rather than group interviews, prevented the more vocal children from dominating questions and enabled each child to express their views independently.

On reflection, using a range of tools for data collection was ambitious, primarily due to limited time. Inadvertently, time constraints resulted in a small sample size, with four pupils from a Reception

class participating in the study. As a result, the findings cannot be generalised to other pupils in the same or different schools (Polit & Beck, 2010). If more time were available, I would have included more pupils from the Reception class and examine whether there would be a significant difference in the findings. Furthermore, more methods of the Mosaic approach would have been implemented to gain an even deeper understanding of pupils' perspectives.

Nonetheless, after crossmatching the interviews with the questionnaire and photos, the findings indicate consistency and therefore, demonstrates high reliability of children's responses (Bolarinwa, 2015). Moreover, by gathering multiple perspectives from students, it aids in increasing the internal validity of the findings (Emond, 2005; Stamatoglou, 1994; Thomson, Hadfield, Kehily, & Sharpe, 2010). Regarding the needs of students, aspects, such as children's right to withdraw from the study, were reiterated during each drawing, questionnaire, and interview session, ensuring that all were given ethical treatment. The final section of the research paper will explore the implications for my own practice.

Implications and conclusion

Following the present research project, there are numerous implications that I will take into account for my professional development. For example, the current study highlighted the importance of outdoor learning through play in FS, which can lead to a culture of independent learning. Thus, this research supports most of the literature examining FS, which indicate that regular sessions in the natural setting can facilitate children's learning and development across multiple domains (Austin et al., 2016; Coates & Pimlott-Wilson, 2019; O'Brien, 2009; Wood, 2007). For example, FS can lead to a host of benefits, including higher: self-esteem, self-confidence, and self-motivation (Barrable & Arvanitis, 2019; Coates & Pimlott-Wilson, 2018; Knight, 2008, 2009, 2011; O'Brien, 2009; Turtle, et al., 2015; Waite, Bølling, & Bentsen, 2016). Ergo, I aim to consistently exercise outdoor education to promote a natural love for learning, to support students' healthy development, and to establish an environment of curiosity.

However, one of the themes which emerged was gender identity and the inequality seen within the natural environment. Although there has been considerable gender convergence within the last century (Bragg, Renold, Ringrose, & Jackson, 2017; Wingrave, 2018), gender differences persist on a worldwide scale, even in the early years (Kleven, Landais, & Egholt Søgaard, 2019; Wingrave,

2018). As a result, I strive to adapt my practices to not only reduce symptoms of gender inequality in FS, but throughout children's lives, irrespective of setting. For instance, some studies note that children's literature which depicts positive, equal, and respectful relationships can help combat gender stereotypes (de Graaf, Manjra, Hames, & Zitz, 2019; Filipović, 2018; Frawley, 2008; Ruterana, 2012). Thus, I will promote and utilise these collections since they can be an effective and powerful facilitator for gender equality. Consequently, practices like these can provide all learners with more opportunities to achieve academically, socially, emotionally, and physically (Coates & Pimlott-Wilson, 2019; O'Brien, 2009; Wingrave, 2018). Nonetheless, further research is required to examine the potential, longer-term effects of FS, and how these programmes may progressively change children's perspectives on gender, both indoors and outdoors.

Additionally, during my role as an educator, I strive to establish an inclusive, child-centred environment, especially after investigating pupils' perspectives. For example, as children's learning environment can be in and outside the classroom, understanding and asking them about their views is fundamental for stimulating inquisitiveness and communication (Bilton, 2002; Merewether, 2015). Accordingly, this can strengthen teacher-student relationships, and thus, reduce the difference in power (Hendrickx, Mainhard, Boor-Klip, Cillessen, & Brekelmans, 2016; Hughes & Kwok, 2007). Ergo, gaining the perspectives of students can enhance one's pedagogy as we can understand more about what individuals want, but also, to build a respectful and trustful relationship with them.

Ultimately, this research project has provided me with invaluable insight regarding the importance of outdoor learning in FS. For instance, although outdoor education can invoke a sense of awe and wonder, it can also produce problematic behaviours, specifically ones associated with gender. Nevertheless, FS allows children to learn through play, and as practitioners, we should play to the strengths of children, rather than to the strengths of adults. After all, the existing literature and steady rise of FS indicate that the future belongs to both children and nature.

References

Adderley, R. J., Hope, M. A., Hughes, G. C., Jones, L., Messiouc, K., & Shawa, P. A. (2015).
Exploring inclusive practices in primary schools: Focusing on children's voices.
European Journal of Special Needs Education, *30*(1), 106–121.
doi:10.1080/08856257.2014.964580

Agee, J. (2009). Developing qualitative research questions: A reflective process. *International Journal of Qualitative Studies in Education*, *22*(4), 431–447. doi:10.1080/09518390902736512

Agha, M., & Agha, R. (2017). The rising prevalence of obesity. *International Journal of Surgery Oncology*, *2*(7), e17. doi:10.1097/IJ9.0000000000000017

Anderson, B. (2012). Listening to young children: The Mosaic approach. *Child Care in Practice*, *18*(3), 293–294. doi:10.1080/13575279.2012.683656

Änggård, E. (2011). Children's gendered and non-gendered play in natural spaces. *Children, Youth and Environments*, *21*(2), 5–33.

Ansari, A., Pettit, K., & Gershoff, E. (2015). Combating obesity in head start: Outdoor play and change in children's body mass index. *Journal of Developmental & Behavioral Pediatrics*, *36*(8), 605–612. doi:10.1097/dbp.0000000000000215

Ärlemalm-Hagsér, E. (2010). Gender choreography and micro-structures – early childhood professionals' understanding of gender roles and gender patterns in outdoor play and learning. *European Early Childhood Education Research Journal*, *18*(4), 515–525. doi:10.1080/1350293X.2010.525951

Austin, C., Knowles, Z., Richards, K., McCree, M., Sayers, J., & Ridgers, N. D. (2016). Play and learning outdoors: Engaging with the natural world using Forest School in the UK. *Space, Place and Environment*, 115–136. doi:10.1007/978-981-287-044-5_2

Barrable, A., & Arvanitis, A. (2019). Flourishing in the forest: looking at Forest School through a self-determination theory lens. *Journal of Outdoor and Environmental Education*, *22*(1), 39–55. doi:10.1007/s42322-018-0018-5

Bento, G., & Dias, G. (2017). The importance of outdoor play for young children's healthy development. Porto Biomedical Journal, 2(5), 157–160. doi:10.1016/j.pbj.2017.03.003

Bentsen, P., & Jensen, F. S. (2012). The nature of udeskole: Outdoor learning theory and practice in Danish schools. *Journal of Adventure Education & Outdoor Learning*, *12*(3), 199–219. doi:10.1080/14729679.2012.699806

Bilton, H. (2002). *Outdoor play in the early years: Management and innovation* (2nd ed.). London, England: David Fulton.

Bilton, H., & Waters, J. (2017). Why take young children outside? A critical consideration of the professed aims for outdoor learning in the early years by teachers from England and Wales. *Social Sciences*, *6*(1), 1–16. doi:10.3390/socsci6010001

Blakemore, J. E. O., & Centers, R. E. (2005). Characteristics of boys' and girls' toys. *Sex Roles: A Journal of Research*, *53(*9-10), 619–633. doi:10.1007/s11199-005-7729-0

Bolarinwa, O. (2015). Principles and methods of validity and reliability testing of questionnaires used in social and health science researches. *Nigerian Postgraduate Medical Journal*, *22*(4), 195. doi:10.4103/1117-1936.173959

Boxberger, K., & Reimers, A. K. (2019). Parental correlates of outdoor play in boys and girls aged 0 to 12 – A systematic review. *International Journal of Environmental Research and Public Health*, *16*(2), 190. doi:10.3390/ijerph16020190

Boynton, P. M., & Greenhalgh, T. (2004). Selecting, designing, and developing your questionnaire. *BMJ*, *328*(7451), 1312–1315. doi:10.1136/bmj.328.7451.1312

Bradbury-Jones, C., & Taylor, J. (2015). Engaging with children as co-researchers: Challenges, counter-challenges and solutions. *International Journal of Social Research Methodology*, *18*(2), 161–173. doi:10.1080/13645579.2013.864589

Bragg, S., Renold, E., Ringrose, J., & Jackson, C. (2017). 'More than boy, girl, male, female': Exploring young people's views on gender diversity within and beyond school contexts. *Sex Education*, *18*(4), 420–434. doi:10.1080/14681811.2018.1439373

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. doi:10.1191/1478088706qp063oa

British Educational Research Association (BERA). (2018). Ethical guidelines for educational research. 4th edn. Available at: https://www.bera.ac.uk/researchers-resources/publications/ethical-guidelines-for-educational-research-2018 (accessed 14 January February 2020).

Brockman, R., Fox, K. R., & Jago, R. (2011). What is the meaning and nature of active play for today's children in the UK? *International Journal of Behavioral Nutrition and Physical Activity*, *8*(1), 15. doi:10.1186/1479-5868-8-15

Brodin, J. (2009) Inclusion through access to outdoor education: Learning in Motion (LIM). *Journal of Adventure Education & Outdoor Learning*, *9*(2), 99–113. doi:10.1080/14729670903004340

Browne, N. (2004). *Gender equity*. Berkshire, England: Open University Press.

Butwright, C., Falch-Lovesey, S., & Lord, C. (2007). *Hopton Literacy Pilot: using Forest Schools experience as a stimulus for speaking and listening, with a focus on raising achievement in boys writing using ICT*. Available at: www.schools.norfolk.gov.uk/ myportal/custom (accessed 25 February 2020).

Chakravarthi, S. (2009). *Preschool teachers' beliefs and practices of outdoor play and outdoor environments (Doctoral dissertation)*. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.453.1839&rep=rep1&type=pdf

Cherney, I. D., & Dempsey, J. (2010). Young children's classification, stereotyping and play behaviour for gender neutral and ambiguous toys. *Educational Psychology*, *30*(6), 651–669. doi:10.1080/01443410.2010.498416

Clark, A., & Statham, J. (2005). Listening to young children: Experts in their own lives. *Adoption & Fostering*, *29*(1), 45–56. doi:10.1177/030857590502900106

Clark, A. (2010a). *Transforming children's spaces: children's and adults' participation in designing learning environments*. London, England: Routledge.

Clark, A. (2011). Breaking methodological boundaries? Exploring visual, participatory methods with adults and young children. European Early Childhood Education Research Journal, 19(3), 321–330. doi:10.1080/1350293x.2011.597964

Clark, A., & Moss, P. (2001). Listening to young children: The Mosaic Approach. London, U.K.: National Children's Bureau and Joseph Rowntree Foundation.

Clark, A., & Moss, P. (2005). Spaces to play: More listening to young children using the Mosaic Approach. London, England: National Children's Bureau.

Clements, R. (2004). An investigation of the status of outdoor play. *Contemporary Issues in Early Childhood*, *5*(1), 68–80. doi:10.2304/ciec.2004.5.1.10

Coates, E., & Coates, A. (2006). Young children talking and drawing. *International Journal of Early Years Education*, *14*(3), 221–241. doi:10.1080/09669760600879961

Coates, J., & Pimlott-Wilson, H. (2019). Learning while playing: Children's Forest School experiences in the UK. British Educational Research Journal, 45(1), 21–40. doi:10.1002/berj.3491

Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). Thousand Oaks, California: SAGE.

Davies, J. (2003). Expressions of gender: An analysis of pupils' gendered discourse styles in small group classroom discussions. *Discourse & Society*, *14*(2), 115–132. doi:10.1177/0957926503014002853

Davies, R. & Hamilton, P. (2018). 'Assessing learning in the early years' Outdoor classroom: Examining challenges in practice. *Education 3-13*, *46*(1), 117–129. doi: 10.1080/03004279.2016.1194448

de Graaf, N. M., Manjra, I. I., Hames, A., & Zitz, C. (2019). Thinking about ethnicity and gender diversity in children and young people. *Clinical Child Psychology and Psychiatry*, *24*(2), 291–303. doi:10.1177/1359104518805801

Department for Education. (2018, February). *Statutory Framework for the Early Years Foundation Stage*. Available at https://www.gov.uk/government/publications/early-years-foundation-stage-framework--2 (accessed 17 January 2020)

Dillon, J., & Dickie, I. (2012). *Learning in the natural environment: Review of social and economic benefits and barriers*. Natural England Commissioned Reports, Number 092. Available at http://publications.naturalengland.org.uk/publication/4524600415223808 (accessed 27 February 2020)

Dockett, S., Einarsdottir, J., & Perry, B. (2009). Researching with children: Ethical tensions. *Journal of Early Childhood Research*, *7*(3), 283–298. doi:10.1177/1476718X09336971

Dowdell, K., Gray, T., & Malone, K. (2011). Nature and its influence on children's outdoor play. *Australian Journal of Outdoor Education*, *15*(2), 24–35. doi: 10.1007/bf03400925

Eagly, A. H., & Wood, W. (2012). Social role theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (p. 458–476). Thousand Oaks, California: SAGE Publications Ltd. doi:10.4135/9781446249222.n49

Ebbeling, C. B., Pawlak, D. B. and Ludwig, D. S. (2002). Childhood obesity: Public-health crisis, common sense cure. *The Lancet*, *360*(9331), 473–482. doi:10.1016/s0140-6736(02)09678-2

Emond, R. (2005). Ethnographic research with children and young people. In: Green S and Hogan D (Eds.), *Researching Children's Experiences: Approaches and Methods*. London, England: SAGE.

Filipović, K. (2018). Gender representation in children's books: Case of an early childhood setting. *Journal of Research in Childhood Education*, *32*(3), 310–325. doi:10.1080/02568543.2018.1464086

Fjørtoft, I. (2001). The natural environment as a playground for children: The impact of outdoor play activities in pre-primary school children. *Early Childhood Education Journal*, *29*(2), 111–117. doi:10.1023/a:1012576913074

Fjørtoft, I. (2004). Landscape as playscape: The effects of natural environments on children's play and motor development. *Children, Youth and Environments*, *14*(2), 21–44.

Flannigan, C., & Dietze, B. (2012). Children, outdoor play, and loose parts. *Journal of Childhood Studies*, *42*(4), 53–60. doi:10.18357/jcs.v42i4.18103

Francis, B., & Paechter, C. (2015). The problem of gender categorisation: Addressing dilemmas past and present in gender and education research. *Gender and Education*, *27*(7), 776–790. doi:10.1080/09540253.2015.1092503

Frawley, T. J. (2008). Gender schema and prejudicial recall: How children misremember, fabricate, and distort gendered picture book information. *Journal of Research in Childhood Education*, *22*(3), 291–303. doi:10.1080/02568540809594628

Gill, P., Stewart, K., Treasure, E., & Chadwick, B. (2008). Methods of data collection in qualitative research: Interviews and focus groups. *British Dental Journal*, *204*(6), 429–432. doi:10.1038/bdj.2008.192

Gray, C. (2011). Children at play. Learning gender in the early years. *International Journal of Early Years Education*, *19*(2), 181–183. doi:10.1080/09669760.2011.613632

Greenfield, C. (2011). Personal reflection on research process and tools: Effectiveness, highlights and challenges in using the Mosaic approach. *Australasian Journal of Early Childhood*, *36*(3), 109–116. doi:10.1177/183693911103600314

Harcourt, D., & Johanna, E. (2011). Introducing children's perspectives and participation in research. *European Early Childhood Education Research Journal*, *19*(3), 301–307, doi:10.1080/1350293X.2011.597962

Harper, N. J. (2017). Outdoor risky play and healthy child development in the shadow of the "risk society": A forest and nature school perspective. *Child Youth Services*, *38*(4), 318–334. doi:10.1080/0145935x.2017.1412825

Harris, F. (2017). The nature of learning at forest school: Practitioners' perspectives. *Education 3–13*, *45*(2), 272–291. doi:10.1080/ 03004279.2015.1078833

Harris, F. (2018). Outdoor learning spaces: The case of forest school. *Area*, *50*(2), 222–231. doi:10.1111/area.12360

Hellman, A., & Heikkilä, M. (2014). Negotiations of gender in early childhood settings. *International Journal of Early Childhood*, *46*(3), 313–316. doi:10.1007/s13158-014-0125-6

Hendrickx, M. M. H. G., Mainhard, M. T., Boor-Klip, H. J., Cillessen, A. H. M., & Brekelmans, M. (2016). Social dynamics in the classroom: Teacher support and conflict and the peer ecology. *Teaching and Teacher Education*, *53*, 30–40. doi:10.1016/j.tate.2015.10.004

Honeyford, M. A., & Boyd, K. (2015). Learning through play: Portraits, Photoshop, and visual literacy practices. *Journal of Adolescent & Adult Literacy*, *59*(1), 63–73. doi: 10.1002/jaal.428

Hood, J. C. (2006). Teaching against the text: The case of qualitative methods. *Teaching Sociology*, *34*(3), 207–223. doi:10.1177/0092055x0603400301

Hughes, J., & Kwok, O.M. (2007). Influence of student-teacher and parent-teacher relationships on lower achieving readers' engagement and achievement in the primary grades. *Journal of Educational Psychology*, *99*(1), 39–51. doi:10.1037/0022-0663.99.1.39

Karsten, L. (2003). Children's use of public space: The gendered world of the playground. *Childhood*, *10*(4), 457–473. doi:10.1177/0907568203104005

Kemple, K. M., Oh, J., Kenney, E., and Smith-Bonahue, T. (2016). The power of outdoor play and play in natural environments. *Childhood Education*, *92*(6), 446–454. doi:10.1080/00094056.2016.1251793

Kershner, R., & Pointon, P. (2000). Children's views of the primary classroom as an environment for working and learning. *Research in Education*, *64*(1), 64–77. doi:10.7227/RIE.64.7

Kleven, H., Landais, C., &, Søgaard, J. E. (2019). Children and gender inequality: Evidence from Denmark. *American Economic Journal: Applied Economics*, *11*(4), 181–209. doi:10.1257/app.20180010

Knight, S. (2008). The wild side of learning. *Early Years Educator*, *10*(2), 14–16. doi:10.12968/eyed.2008.10.2.29165

Knight, S. (2009). *Forest Schools and outdoor play in the early years*. London, England: SAGE.

Knight, S. (2011). Forest Schools as a way of learning in the outdoors in the UK. *International Journal for Cross-Disciplinary Subjects in Education*, *1*(1), 590–595. doi:10.20533/ijcdse.2042.6364.2011.0082

Koenig, A. M., & Eagly, A. H. (2014). Evidence for the social role theory of stereotype content: Observations of groups' roles shape stereotypes. *Journal of Personality and Social Psychology*, *107*(3), 371–392. doi:10.1037/a0037215

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.

Leaper, C., Anderson, K. J., & Sanders, P. (1998). Moderators of gender effects on parents' talk to their children: A meta-analysis. *Developmental Psychology*, *34*(1), 3–27. doi:10.1037/0012-1649.34.1.3

Leather, M. (2017). A critique of forest school: Something lost in translation. *Journal of Outdoor and Environmental Education*, *17*(1), 176–177. doi:10.1007/s42322-017-0006-1

Leeb, R. T., & Rejskind, G. (2004). Here's looking at you, kid! A longitudinal study of perceived gender differences in mutual gaze behavior in young infants. *Sex Roles*, *50*(1/2), 1–14. doi:10.1023/B:SERS.0000011068.42663.ce

Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology*, 140, 1–55.

Little, H., & Wyver, S. (2008). Outdoor play: Does avoiding the risks reduce the benefits? *Australasian Journal of Early Childhood*, *33*(2), 33–40. doi:10.1177/183693910803300206

Lovell, R. (2009). *Evaluation of Physical Activity at Forest School*. Edinburgh, Scotland: The University of Edinburgh.

MacNaughton, G. (2006). *Constructing gender in early-years education*. In Skelton, C., Francis, B., & Smulyan, L. (eds.), The SAGE Handbook of Gender and Education (pp. 127–138). London, England: Sage.

Maller, C., Townsend, M., Pryor, A., Brown, P., & St Leger, L. (2006). Healthy nature healthy people: "Contact with nature" as an upstream health promotion intervention for populations. *Health Promotion International*, *21*(1), 45–54. doi:10.1093/heapro/dai032

Martin, B. (2011). *Children at play*. Stoke-on-Trent, England: Trentham Books.

Martin, C. L., & Ruble, D. N. (2010). Patterns of gender development. *Annual Review of Psychology*, *61*(1), 353–381. doi:10.1146/annurev.psych.093008.100511

Mason, J. (2006). Mixing methods in a qualitatively driven way. *Qualitative Research*, *6*(1) 9–26. doi:10.1177/1468794106058866

Maynard, T. (2007). Forest Schools in Great Britain: An initial exploration. *Contemporary Issues in Early Childhood*, *8*(4), 320–331. doi:10.2304/ciec.2007.8.4.320

Maynard, T., & Waters, J. (2007). Learning in the outdoor environment: A missed opportunity. *Early Years*, *27*(3), 255–265. doi:10.1080/09575140701594400

Meland, A. T., & Kaltvedt, E. H. (2017). Tracking gender in kindergarten. *Early Child Development and Care*, *189*(1), 94–103. doi:10.1080/03004430.2017.1302945

Merewether, J. (2015). Young children's perspectives of outdoor learning spaces: What matters? *Australasian Journal of Early Childhood*, *40*(1), 99–108. doi:10.1177/183693911504000113

Merewether, J., & Fleet, A. (2014). Seeking children's perspectives: A respectful layered approach. *Early Child Development and Care*, *184*(6), 897–914. doi:10.1080/03004430.2013.829821

Muñoz, S.A. (2009). *Children in the outdoors: A literature review*. Forres, Scotland: Sustainable Development Research Centre.

Murray, J. (2019). Hearing young children's voices. *International Journal of Early Years Education*, *27*(1), 1–5. doi:10.1080/09669760.2018.1563352

Murray, R., & O'Brien, E. (2005). *Such enthusiasm – A joy to see: An evaluation of Forest School in England. Report to the Forestry Commission*. Available at: https://www.forestresearch.gov.uk/research/forest-school-a-marvellous-opportunity-to-learn/ (accessed 27 February 2020).

Neto, F., & Furnham, A. (2005). Gender-role portrayals in children's television advertisements. *International Journal of Adolescence and Youth*, *12*(1-2), 69–90. doi:10.1080/02673843.2005.9747944

Noble, H., & Smith, J. (2015). Issues of validity and reliability in qualitative research. *Evidence Based. Nursing*, *18*(2), 34–35. doi:10.1136/eb-2015-102054

Norling, M., & Sandberg, A. (2015). Language learning in outdoor environments: Perspectives of preschool staff.

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet trustworthiness criteria. *International Journal of Qualitative Methods*, *16*(1), 1–13. doi:10.1177/1609406917733847

O'Brien, L. (2009). Learning outdoors: The Forest School approach. *Education 3–13: International Journal of Primary, Elementary and Early Years Education*, *37*(1), 45–60. doi:10.1080/03004270802291798

O'Brien, L., & Murray, R. (2007). Forest School and its impacts on young children: Case studies in Britain. *Urban Forestry & Urban Greening*, *6*(4), 249–265. doi:10.1016/j.ufug.2007.03.006

O'Brien, E., & Weldon, S. (2007). A place where the needs of every child matters: Factors affecting the use of greenspace and woodlands for children and young people. *Countryside Recreation Journal*, *15*(3), 6–9.

Phillips, S. P. (2005). Defining and measuring gender: A social determinant of health whose time has come. *Internal Journal for Equity in Health*, *4*(1), 11. doi:10.1186/1475-9276-4-11

Pistrang, N., & Barker, C. (2010). Scientific, practical and personal decisions in selecting qualitative methods. In M. Barkham, G. E. Hardy, & J. Mellor-Clark (Eds.), *Developing and delivering practice-based evidence* (pp. 65–90). London, England: John Wiley & Sons.

Polit, D. F., & Beck, C. H. (2010). Generalization in quantitative and qualitative research: Myths and strategies. *International Journal of Nursing Studies*, *47*(11),1451– 1458. doi:10.1016/j.ijnurstu.2010.06.004

Rees, R., Oliver, K., Woodman, J., & Thomas, J. (2011). The views of young children in the UK about obesity, body size, shape and weight: a systematic review. *BMC Public Health*, *11*(1), 1471–2458. doi:10.1186/1471-2458-11-188

Reimers, A. K., Schoeppe S., Demetriou, Y., & Knapp, G. (2018). Physical activity and outdoor play of children in public playgrounds – Do gender and social environment matter? *International Journal of Environmental Research and Public Health*, *15*(7), 1356. doi:10.3390/ijerph150713564

Ridgers, N. D., Knowles, Z. R., & Sayers, J. (2012). Encouraging play in the natural environment: A child-focused case study of Forest School. *Children's Geographies*, *10*(1), 49–65. doi:10.1080/14733285.2011.638176

Roberts-Holmes, G. (2011). *Doing your early years research project: A step by step guide* (2nd ed.). London, England: SAGE.

Robinson, O. C. (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative Research in Psychology*, *11*(1), 25–41. doi: 10.1080/14780887.2013.801543

Robson, C. (2002). *Real world research* (2nd ed.). Oxford, England: Blackwell Publishing.

Ruterana, P. C. (2017). Using children's literature to promote gender equality in education: The case of the fairy tale of Ndabaga in Rwanda. *Journal of Pan African Studies*, *4*(9), 85– 101. doi:10.4314/rj.v2i2.4a

Schmalz, D. L., & Kerstetter, D. L. (2006). Girlie girls and manly men: Children's stigma consciousness of gender in sports and physical activities. *Journal of Leisure Research*, *38*(4), 536–557. doi:10.1080/00222216.2006.11950091

Scott, G., Boyd, M., Colquhoun, D. (2013). Changing spaces, changing relationships: The positive impact. *Australian Journal of Outdoor Education*, *17*(1), 47–53. doi:10.1007/bf03400955

Shutts, K., Banaji, M. R., & Spelke, E. S. (2010). Social categories guide young children's preferences for novel objects. *Developmental Science*, *13*(4), 599–610. doi:10. 1111/j.1467-7687.2009.00913.x

Signorielli, N. (1990). Children, television, and gender roles: Messages and impact. *Journal of Adolescent Health Care*, *11*(1), 50–58. doi:10.1016/0197-0070(90)90129-P

Slattery, E. L., Voelker, C. C. J., Nussenbaum, B., Rich, J. T., Paniello, R. C., & Neely, J. G. (2011). A practical guide to surveys and questionnaires. *Otolaryngology–Head and Neck Surgery*, *144*(6), 831–837. doi:10.1177/0194599811399724

Spinner, L., Cameron, L., & Calogero, R. (2018). Peer toy play as a gateway to children's gender flexibility: The effect of (counter) stereotypic portrayals of peers in children's magazines. *Sex Roles*, 79(5–6), 314–328. doi: 10.1007/s11199-017-0883-3

Stamatoglou, M. (1994). *Listening to young children's voices: An ethnographic study on nursery play*. Paper presented at the 30th BERA (British Educational Research Association) Annual Conference. Manchester, England: UMIST.

Stephenson, A. (2003). Physical risk-taking: Dangerous or endangered? *Early Years*, *23*(1), 35–43. doi:10.1080/0957514032000045573

Storli, R. & Hagen, T. L. (2010). Affordances in outdoor environments and children's physically active play in pre-school. *European Early Childhood Education Research Journal*, *18*(4), 445–456. doi:10.1080/1350293x.2010.525923

Thomson, R., Hadfield, L., Kehily, M. J., & Sharpe, S. (2012). Acting up and acting out: encountering children in a longitudinal study of mothering. *Qualitative Research*, *12*(2), 186–201. doi:10.1177/1468794111421876

Trapasso, E., Knowles, Z. R., Boddy, L. M., Newson, L. M., Sayers, J., & Austin, C. (2018). Exploring gender differences within Forest Schools as a physical activity intervention. *Children*, *5*(10), 138. doi:10.3390/children5100138

Turtle, C., Convery, I., & Convery, K. (2015). Forest Schools and environmental attitudes: A case study of children aged 8–11 years. *Cogent Education*, *2*(1). doi:10.1080/2331186x.2015.1100103

U.K. Parliament. (2018). *Data Protection Act*. HMSO, London.

Vogt, F., Hauser, B., Stebler, R., Rechsteiner, K., & Urech, C. (2018). Learning through play – pedagogy and learning outcomes in early childhood mathematics. *European Early Childhood Education Research Journal*, *26*(4), 589–603. doi:10.1080/1350293X.2018.1487160

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press. doi:10.2307/j.ctvjf9vz4.5

Waite, S. (2011). Teaching and learning outside the classroom: Personal values, alternative pedagogies and standards. *Education 3–13*, *39*(1), 65–82. doi: 10.1080/03004270903206141

Waite, S., & Davis, B. (2007). The contribution of free play and structured activities in Forest School to learning beyond cognition: Sn English case: Chapter in edited book, Ravn, B. & Kryger, N. (eds.) (2007) Learning beyond Cognition, Copenhagen: the Danish University of Education, pp. 257-274.

Waite, S., Bølling, M., & Bentsen, P. (2016). Comparing apples and pears?: A conceptual framework for understanding forms of outdoor learning through comparison of English Forest Schools and Danish udeskole. *Environmental Education Research*, *22*(6), 868–892. doi:10.1080/13504622.2015.1075193

Waller, T. (2010). 'Let's throw that big stick in the river': An exploration of gender in the construction of shared narratives around outdoor spaces. *European Early Childhood Education Research Journal*, *18*(4), 527–542. doi:10.1080/1350293x.2010.525953

Waller, T., & Bitou, A. (2011). Research with children: Three challenges for participatory research in early childhood. *European Early Childhood Education Research Journal*, *19*(1), 5–20. doi:10.1080/1350293x.2011.548964

Waller, T., Sandseter, E. B. H., Wyver, S., Ärlemalm-Hagsér, E., & Maynard, T. (2010). The dynamics of early childhood spaces: Opportunities for outdoor play? European Early Childhood Education Research, 18(4), 437–443. doi:10.1080/1350293x.2010.525917

Weisberg, D. S., Hirsh-Pasek, K., Golinkoff, R. M., Kittredge, A. K., & Klahr, D. (2016). Guided play: Principles and practices. *Current Directions in Psychological Science*, *25*(3), 177–182. https://doi.org/10.1177/0963721416645512

Wingrave, M. (2018). Perceptions of gender in the early years. *Gender and Education*, *30*(5), 587–606. doi:10.1080/09540253.2016.1258457

Wisdom, J., & Creswell, J. W. (2013). *Mixed methods: Integrating quantitative and qualitative data collection and analysis while studying patient-centered medical home models* (AHRQ Publication No. 13-0028-EF). Rockville, Maryland: Agency for Healthcare Research and Quality.

Wood, E. (2013). *Play, learning and the early childhood curriculum* (3rd ed.). London, England: Sage.

Wood, E. (2017). *Listening to young children: Multiple voices, meanings and understandings*. In Goodliff, G., Canning, Parry, J., & Miller, L. (Eds.), *Young children's play and creativity* (150–162). London, England: Routledge. doi:10.4324/9781315446844-12

Zink, R., & Burrows, L. (2008). "Is what you see what you get?" The production of knowledge in between the indoors and the outdoors in outdoor education. *Physical Education and Sport Pedagogy*, *13*(3), 251–265. doi:10.1080/17408980701345733

Zohrabi, M. (2013). Mixed method research: Instruments, validity, reliability and reporting findings. *Theory and Practice in Language Studies*, *3*(2), 254–262. doi:10.4304/tpls.3.2.254-262