



Original article

Characteristics of forest sites used by a Danish forest preschool



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ARTICLE INFO

Article history:

Received 16 February 2016

Received in revised form

23 September 2016

Accepted 26 September 2016

Available online 30 September 2016

Keywords:

Affordances

Children's view

Forest management

Forest school

Green space management

Staff view

ABSTRACT

Outdoor stays in green settings are regarded as beneficial for preschoolers, but not much is known about the characteristics of the sites that are chosen and used by outdoor preschools, the so-called 'forest sites'. Therefore, this paper investigates the characteristics and use of forest sites in a Danish forest preschool and the activities and features in use during time for child-initiated activities.

Staff and children (approx. 3–6.5 years) walked to a forest site and stayed for 2–5 h on a daily basis. Fifteen forest sites were observed in school hours at 24 stays during one year. This was supplemented by short interviews and informal talks with children and staff to learn more about the forest sites. The findings were organised according to the following ten classes of outdoor features: Open Ground, Sloping Terrain, Shielded Places, Rigid Fixtures, Moving Fixtures, Loose Objects, Loose Material, Water, Creatures and Fire.

Most forest sites were glades or pillar halls, often situated at the intersection between different plantings. Staff avoided locations near deep water bodies with steep sides, but at most sites open water was either available at the site or nearby. The daily choice of forest site was connected to the location and features of the site, as well as the weather and season, the actual group of children, and the level of staffing. Children and staff opinion on sites often coincided. Children used features from all classes, but 'loose objects' were most often referred to in the interviews. Children as well as staff valued 'shielded places', but for staff this was only to a certain degree, since surveillance was important.

It is suggested that the results, although derived from a single case, may inspire design and management of green spaces and forest in relation to preschools.

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1. Introduction

A growing number of children spend their weekdays in institutional care. In Denmark, 97% of the children aged 3 to 5 attend preschool (Danmarks.Statistik, 2013). Children start formal schooling in August the calendar year they turn 6. Since children spend so much time away from home, many decisions about children's outdoor life are taken by the preschools. Most preschool children in Denmark spend a considerable amount of time each day in outdoor settings next to the preschool premises. These settings are most often designed and contain play equipment.

Studies about children's outdoor behaviour show that children select places that offer opportunities for various activities (Mårtensson, 2004; Moore, 2014), seek hiding places (Gitz-Johansen et al., 2001; Kirkby, 1989; Herrington and Studtmann,

1998; Kylin, 2004), are attracted to specific features such as play equipment, a pair of large stones, a particular tree, a spot between shrubs or a location with a good view (Mårtensson, 2004), or a ditch (Lerstrup and Møller, in press); children often seek thrilling and risky activities (Sandseter, 2009), and are inspired by loose parts and natural elements (Herrington and Studtmann, 1998; Kylin, 2004; Laaksoharju et al., 2012; Kylin, 2003). When older children aged 7–11 were asked about outdoor areas, they expressed an interest in 'fun', 'a lot to do', and 'lots of things', and natural elements as well as the play equipment were valued (Jansson, 2008). Children aged 9–13 who were interviewed while walking often pointed out dens and loose objects for den-building as important (Kylin, 2003).

Research indicates that the design of preschool outdoor spaces has an impact on children's activities and health (Cosco, 2006; Boldemann et al., 2011; Söderström et al., 2013) and that spending time in green outdoor settings is healthy and educational for preschool children (Grahm et al., 1997; Kiener, 2004, 2009; Vigsø and Nielsen, 2006; Fjørtoft, 2001; O'Brien, 2009; O'Brien and Murray, 2007; Fjørtoft and Sageie, 2000).

Some preschools in Denmark have a tradition for outdoor stays in green settings as an essential part of daily life, the

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so-called outdoor preschools, including forest preschools, nature preschools, commuter preschools and bus preschools. These kinds of preschools are not standardised and the names are not used consistently, but they share a practice with extensive outdoor stay in natural or semi-natural settings regardless of weather and season. Usually, forest and nature preschools stay in forest and natural areas nearby, commuter preschools travel from the city to a house in green settings, and bus preschools go by bus to different sites in the surroundings, often green settings. Commuter preschools are considered to be a Danish invention (Lysklett, 2013). Jointly the outdoor preschools represent a wide range of ways to organize the outdoor stays regarding choice of outdoor sites and frequency and length of stay.

For more children and preschools, especially in urban areas, to benefit from the potentials of nearby forests and green spaces, these could be planned, designed and managed to better suit their needs. Hence, children's and staff members' experiences of using forests settings in an existing forest preschool and a close study of the used sites and features might be informative. The research question is as follows: *What are the characteristics of forest sites used and valued by children and staff in preschool, exemplified by the study of a specific Danish forest preschool?*

1.1. Theoretical framework

To understand the properties of the studied forest sites, the theoretical concept of *affordances* developed by Gibson (1979) within the field of ecological psychology was chosen. Gibson coined the term 'affordances': "The *affordances* of the environment are what it *affords* the animal, what it *provides* or *furnishes*, either for good or ill." (Gibson, 1979, 127). The affordances of a setting exist in relation to a person or a group of persons and their sizes, abilities and interests. The concept highlights the close and dynamic relationships between the environment, the users, and their actions. In this study, affordances refer to *the meaningful action possibilities of the environment*. In focus are the activities offered by the setting, and the features offering the activities, i.e. the *affording features*.

Affordances defined as functional significances of environmental features were the outset for a functional taxonomy of children's outdoor environments by Heft (1988). Based on observations of pre-schoolers in a playground and forest settings for two months in winter/early spring, the taxonomy was modified for children in preschool (Lerstrup and van den Bosch, 2016). The result was a classification of outdoor features for children in preschools with ten classes: *Open Ground, Sloping Terrain, Shielded Places, Rigid Fixtures, Moving Fixtures, Loose Objects, Loose Material, Water, Creatures and Fire*. Each class was specified by key activities based on analysis of the observations. The key activities were the activities observed to be distinctive for the class and attractive for children in preschool. Within each class, the features that made the key activities possible were considered to be *affording* for children in preschool. The classes were created to get an overview and not to suggest that features from the classes should be kept apart in different sub-settings (ibid.). The mentioned classification of outdoor features is used to structure the data in this study.

The definitions used in this study are presented in Box 1 below.

2. Methods

A field study was carried out with a group of 21 children aged approx. 3–6.5 and three staff members in a forest preschool. The preschool was chosen because it used many forest sites and was conveniently located. On average 4 out of 5 days a week in all seasons the 21 children walked to a forest site accompanied by 2–3 staff members for a stay of 2–5 h per stay. The forest sites were not

Box 1: Definitions in this study.

Affordances	The meaningful action possibilities of the environment
Affording features	The specific features that afford the meaningful activities
Fixtures	Fixed objects such as trees, shrubs, boulders, logs, bridges
Forest features	Outdoor features, that are not or only subtly manufactured such as plants, creatures, ditches, saw dust, water bodies
Forest preschools	Preschools where stays in forest sites play an essential role in daily life
Forest sites	Sites in public accessible green settings used for preschool stays, often named
Green settings	Outdoor settings where forest features are perceived as dominant; including natural, semi-natural and cultivated areas
Playgrounds	Areas planned and designed for children's play, mainly with manufactured play equipment
Shielded Places	Places and structures where children can be fully or partly shielded from view and intrusion

designed with preschools in mind, but were chosen by the staff as suitable sites among a vast number of possible places in the forest as explained later. The forest preschool was located on the edge of Sorø, a small town 80 km west of Copenhagen, Denmark. The preschool premises were located close to the forest edge. The forest was open to the public, owned by a foundation and was primarily used for wood production.

The characteristics of sites from an affordance perspective were identified by observing sites, activities and features in use in child-initiated activities and by interviewing users in situ and in retrospect, a method for investigation of affordances described by Heft and Kyttä (2006). The observations of activities and used features in child-initiated activities were interpreted as children's non-verbal responses to a question about affordances: *meaningful actions and affording features in the setting*. The study consisted of the following steps:

- 1) The group of 21 children was observed for 1–2 h during times for free play in the forest. Throughout 2011, 24 stays with observations were conducted at 15 different forest sites; some sites were visited more than once. The activities and features in use were observed and registered in field notes and by video recordings by an ethnography-inspired method in which it is important to be present, preferably for long periods of time, to search for patterns. In order to disturb as little as possible when observing, the researcher participated as an 'atypical adult': the observer was accepted as part of the group, but neither as a child nor a staff member (Gulløv and Højlund, 2003).
- 2) The observed forest sites were sketched using signatures such as districts, edges, special features, water and ground cover. The sizes of areas in use were measured by a mobile-phone app.
- 3) Short structured interviews were conducted with an enlarged group of children consisting of all children in the forest preschool, in total 41 children. The children were interviewed and videotaped in 18 groups of 2–4 by a staff member in the forest in early spring. The questions asked were: *Which forest sites do you know? Which forest site do you like the best? Why? What do you do in the forest?* It was assumed that children would mention sites, features and activities of value. Their answers identified meaningful activities and favoured features that the children could remember and were able to articulate at the moment. Semi-structured interviews were conducted with the preschool leader and the 3 staff members of the observed group in the forest in early spring. The themes were: *good forest site, best forest sites and daily choice of forest site*.

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