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The Perfect Schoolyard for Future Children: Primary School Children's Participation in Envisioning Workshops

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Abstract

This Swedish study investigates how primary school children's perspectives on a "good schoolyard" can be illuminated through envisioning workshops using model-making. In addition to advocating for the qualities and affordances of the standard schoolyard equipment, children also suggested and constructed new features affording playing with domestic animals, being in peace and quiet in tree houses, picking fruit, and using digital playgrounds. For the children to go beyond reproducing the features, environmental qualities, and affordances of their current schoolyards, they needed plenty of time for communication and hands-on activities, opportunities to relax, imagine, and receive input and inspiration from others' experiences.

Keywords: envisioning, primary school, schoolyard, affordances, environmental qualities, model-making, participatory envisioning workshop

Sweden and the other Nordic countries have a long outdoor tradition (Sörlin & Sandell, 2000). Historically, in a romantic tradition, children, childhood, and nature were often perceived as closely interconnected (Halldén, 2009; 2011; Taylor, 2013). In this tradition, children were at times even depicted as closer to and in greater harmony with nature, and less corrupted than adults by the temptations of modern, urban life. In contrast, in today's Sweden, with its increased densification of urban areas, many children have decreasing access to outdoor areas and natural environments and spend less and less of their free time outdoors. For many children, schoolyards are becoming increasingly important as outdoor environments. Thus, both the size and the design of schoolyards are of increasing importance to consider in city planning and schoolyard development.

There are studies from several fields of research providing guidelines and scientific support for how to design child-friendly schoolyards (Boldemann et al., 2006; Chawla et al., 2014; Dyment, 2005; Mårtensson et al., 2014; Puhakka et al., 2019; van Dijk-Wesselius et al., 2018). Many researchers have emphasized that outdoor environments have well-documented benefits for children's health, well-being, and learning, including their environmental engagement (Blair, 2009; Chawla, 1999; 2015; O'Brien & Murray, 2007; Taylor & Kuo, 2006; Waite, 2010). Additionally, recent research (Roslund et al., 2020) shows the positive effect on children's immune systems from the introduction of living plants and soil with healthy microorganisms in preschool yards.

With this research in mind, children's preferences for spaces and environmental qualities are also to be considered when planning schoolyards and similar outdoor environments (Clark & Moss, 2001; Ellis et al., 2015; Francis & Lorenzo, 2002; Gerke & Sanyal, 2014; Ghaziani, 2012; Holmes & Procaccino, 2009; Moore & Wong, 1997; O'Sullivan et al., 2017).

Prior Research on Children's Preferences for Schoolyards

Norðdahl and Einarsdóttir (2015) undertook a research and development project that included preschool and elementary schoolchildren as stakeholders in decision-making about school ground construction. The project, including children from two schools in Iceland, is one of few studies from the Nordic countries about how children want to use the schoolyard. The children in the project were both listened to and respected as stakeholders, and they had an impact on the schoolyard design—for example, causing the parking lot to be transformed into a green play area. In line with previous research, given the opportunity to influence their surroundings, the children in both schools preferred variation in the landscape. They wanted a combination of natural phenomena, such as plants and animals, and man-made play equipment. The children wanted the school grounds to give them opportunities to challenge themselves and take risks, but also, in contrast to findings of previous studies, to provide security. Furthermore, congruent with previous studies (e.g., Clark, 2007), children wanted opportunities to explore natural elements; to be in contact with other human beings, animals, plants, and other living organisms; and to enjoy beautiful things (Norðdahl & Einarsdóttir, 2015). Pearson and Howe (2017) also included children in primary school as stakeholders in schoolyard redesign. In their study, the actual process of

participation, related to the "ladder of participation" (Hart, 1992; 2008), was in focus, highlighting both the value of and challenges in participatory approaches in education.

Castonguay and Jutras (2009) suggested that children's preferences for natural settings have declined in favor of formal play and sport settings over recent decades, due to a lack of experiences of natural places. Other studies, however, proposed that school-age children still favor natural settings, if available (Loukaitou-Sideris, 2003; Lucas & Dyment, 2010; Samborski, 2010; Sancar & Severcan, 2010). Children's affinity for natural places has been explained by the natural environment's greater diversity of affordances for play as compared to those of man-made contexts (Chawla, 1992; Dowdell et al., 2011; Fjørtoft, 2001; Fjørtoft & Sageie, 2000; Kuh et al., 2013; Samborski, 2010) and by the greater creative possibilities of natural objects than of man-made objects (Elliot, 2010).

Affordances

The concept of affordance refers to a relationship between an individual and the environment. Therefore, depending on an individual's experiences and preferences, a feature in the environment can offer different affordances. A tree, for instance, can afford resting, climbing, hiding, or providing timber. The environment itself carries possibilities independent of the individual, but what a given individual perceives as an affordance is dependent on that individual. Heft (1988) applied the concept in creating a taxonomy for children's outdoor environments, containing lists of features, affordances, and activities. Kyttä (2002; 2003) later developed this into an affordance taxonomy, applicable for children aged 5 to 12 years, and based on environmental features such as flat, relatively smooth surfaces and slopes, climbable features, shelters, and so forth.

Inspired by the concept of affordance (Gibson, 1979/1986; Heft, 1988; Kyttä, 2002; 2003), we have looked for the functional and emotional meanings children assign to features and structures they suggest as essential in a schoolyard. Typically, affordances are explored through observation of children's use of their environment. However, in this study we intended to go beyond the already existing elements, inviting children to use their imagination to create the best possible future schoolyard. We did this through involving 6- and 7-year-old children in schoolyard model-making, pretend play, and conversations about the possible use of features and environmental qualities.

Study Aim

This study investigates how primary school children's perspectives on what makes the best possible schoolyard can be illuminated through a participatory envisioning workshop using model-making in small groups of children. Our research question was: Through children's participatory envisioning workshops, what environmental qualities and affordances emerge as essential for child-friendly schoolyards?

Method

Study Setting

Children from two similar primary schools were asked to take part in the research project. Altogether 83 children participated, 37 from one school and 46 from the other school, with a total of 37 girls and 46 boys. Twenty-nine were in first grade (about seven years old) and 54 were in preschool class[1] (about six years old). Both schools are in urban areas, with schoolyards mainly covered in asphalt, with additional areas of grass, shrubbery, or trees. Both schoolyards were equipped with conventional playground equipment and amenities such as swings, climbing structures, a climbing wall, sandbox, floorball/floor hockey rink, and soccer and basketball fields.

The Envisioning Workshop: A Creative Process for Data Collection

A variety of methods have been used in previous studies to explore children's preferences for features and affordances in outdoor environments. Multi-method designs, such as the Mosaic approach developed for outdoor environments (Clark & Moss, 2001), may involve two or more methods including interviews, drawing sessions, focus groups, child-led walks, model-making, photography, and so forth (Christidou et al., 2013; Khan et al., 2019; 2020; Pearson & Howe, 2017). Using different methods, researchers can offer children a chance to choose their preferred mode of communication (Clark & Moss, 2001; Einarsdóttir, 2007; Khan et al., 2020).

Model-making has been proposed to function well as it makes adapting materials to different age groups easier; it is less intimidating than drawing; it offers a large degree of control; it is easy to comprehend models; and the final product is easy to display (Iltus & Hart, 1995). Studies of young children's preferences related to schoolyards or play areas that involve model-making include those by Siraj-Blatchford et al. (2010), Pearson and Howe (2017), and Khan et al. (2019). Similarly, we chose to work with envisioning workshops with a multimodal character, where the invited children were given the opportunity to collaborate with other children and adults to outline their ideas through drawing, creating, and building models. Access to a rich assortment of different materials was provided so as to inspire the children to enact their ideas.

The Study Procedure

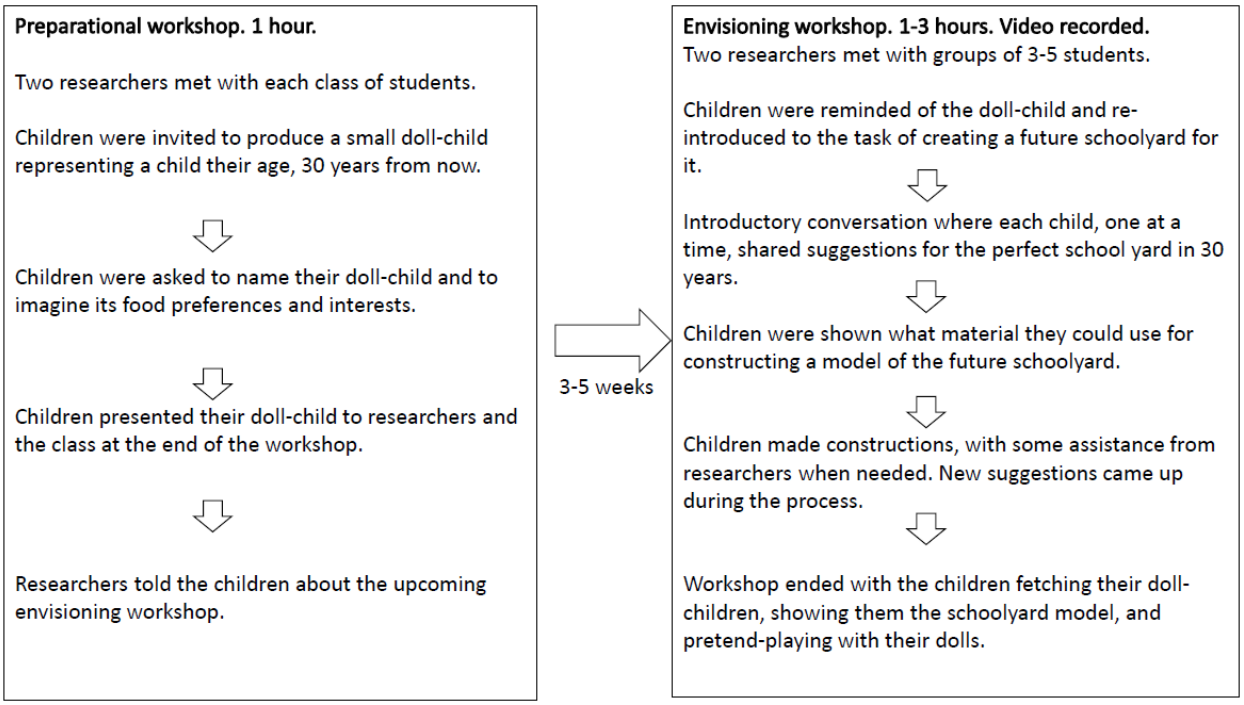
We visited each class, presented the purpose of the research, and invited the children to participate. The children were informed that they could opt out of the study at any time, and we obtained informed consent from the children and their parents. A major ethical concern for the design of the data collection was to create an unimposing, comfortable, and stimulating situation for the participants. The

[1] The preschool class is a transition class that children can attend from the year they turn six until they begin compulsory schooling. Swedish municipalities are required to provide all 6-year-olds with a place in preschool class. At the time of the study, preschool class was not compulsory but since then it has become part of compulsory schooling.

procedure consisted of two parts: the preparational workshop, which did not involve any data collection, and the data collecting envisioning workshop.

Two of the researchers led the activities both in the preparational workshop and the envisioning workshop. During the envisioning workshop, one of the researchers (EA) led the initial discussion in which children came up with their suggestions for a future schoolyard. Both researchers (EA and PA) asked the children questions during the model building and assisted them when needed. One of the researchers (PA) was responsible for the video and voice recording during the envisioning workshops (Figure 1).

Figure 1. Diagram showing the study procedure including preparational workshop and envisioning workshop



In the preparational workshop, each child was invited to produce a small doll-child to represent a 6- or 7-year-old child who lives 30 years in the future. The doll-making was inspired by Breiting et al. (2005), who suggested this method to introduce a future perspective to children as part of education for sustainable development. Each child was asked to name their doll-child and to imagine its food preferences and interests, and each presented their doll-child at the end of the preparational workshop (Figure 2). In our study we used the doll-children to stimulate pretend play.

Figure 2. Doll-children made by children in the preparational workshop

The children were informed that at the next visit they would construct models of the ideal schoolyard, 30 years in the future, which their doll-child could play in.

After three to five weeks, the children were invited to step two, the envisioning workshop. Each participating child joined in a workshop with a group of three to five students, for a total of 18 workshops. These were led by the researchers in a separate, relatively undisturbed room at the school, during school hours.

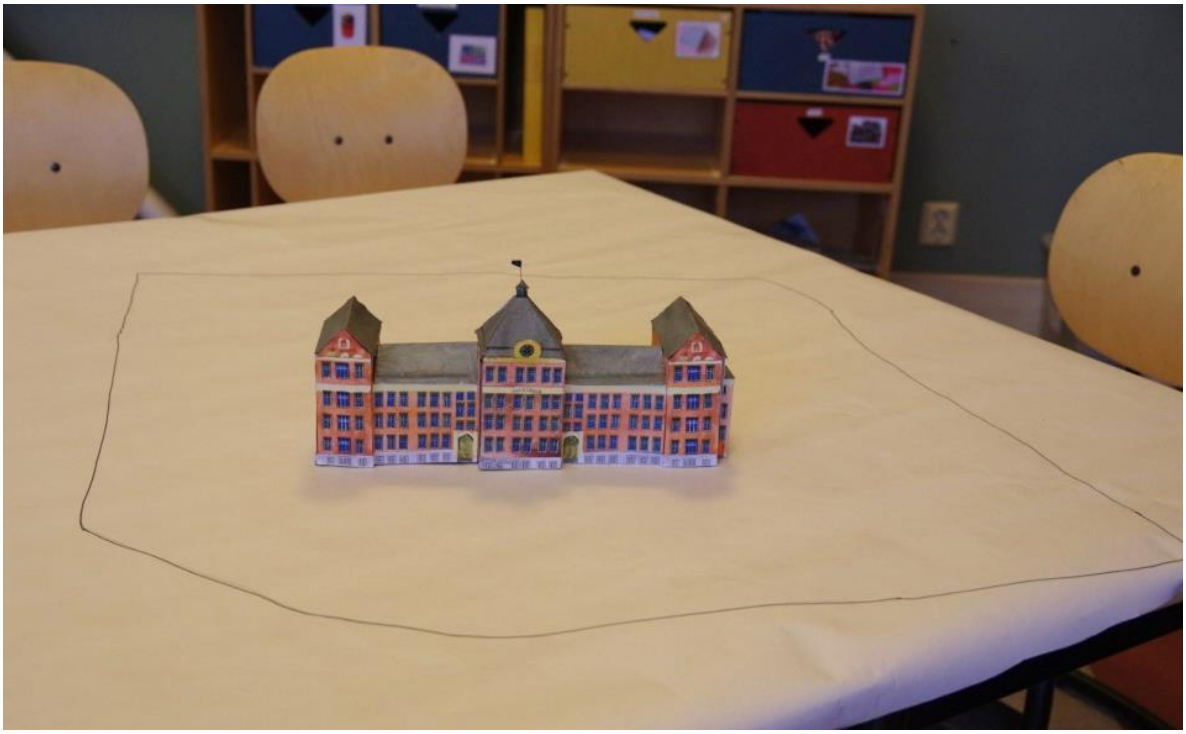
Each workshop took between 60 and 180 minutes, depending on the school schedule and on the children's wishes. In several cases, the children wanted to participate longer than the set time, and this often led to extended sessions. Only two children got tired after about an hour and chose to go outdoors and take a break. The workshops were video recorded, and to ensure that every child's voice would be heard, each child was provided with a microphone and was recorded on a separate track. In some cases, the individual recordings were used to clarify children's accounts.

According to Iltus and Hart, "children communicate with each other using toys, which can also be used as a medium for engaging them in activities that help us to discover their desires" (1995, p. 150). Both the dolls and the construction materials later introduced for model-making turned out to serve this purpose well.

The children were invited to sit around a table on which cardboard models of the schoolyard building(s) were placed and the approximate present borders of school grounds were drawn (Figure 3). The children were reminded of their doll-children,

which were placed nearby, and the researchers repeated that the quest today was to create the best possible schoolyard for these future children.

Figure 3. Model of school building in one of the schools at start of workshop



After an introductory conversation spontaneously led by the children, we asked the children to share, one-by-one, what they wanted their children's schoolyard to be in 30 years. When the children had exhausted their ideas and suggestions and discussed each other's proposals, they were shown materials that they could use for constructing models of features and structures for the schoolyard. Materials that might influence their ideas, such as branched sticks that resembled trees, were withheld until the children suggested that they wanted, for instance, trees in the schoolyard. This was to prevent the construction materials themselves from guiding the children's creations from the start. Our decision to use the model-making method and pretend play with the dolls was motivated by the expectation that this would give the children distance from the already-existing schoolyard and facilitate innovation by giving them time to imagine and consider possibilities beyond present conditions. The workshops took place in different rooms, depending on which ones were available at the time, which may have influenced the children's ideas to some extent. For instance, one group, sitting in a classroom with a wall poster of fungi, suggested having fungi in the yard. Other happenstances during the workshops also impacted the pathways children took in their envisioning, such as when one child found an oblong piece of clay and suggested having a snake in the yard, or when children discovered a good way to make model flowers and ended up creating a flowery schoolyard.

To prevent the children from avoiding suggesting things that they found hard or boring to model, the researchers offered to assist in the model-making, following the children's instructions, for instance, creating climbing frames of pipe cleaners. The researchers seldom interfered except to make sure all the children were heard, to clarify what the children wanted and why, and, in a few cases, to avoid unnecessary destruction of materials. As the presence of animals appeared to be particularly emotionally engaging for the children, groups that had not discussed including animals were prompted about this by the end of the workshop. This was to clarify whether it was a conscious decision not to have animals in the schoolyard or if no one had thought to mention them.

The envisioning workshops ended with the children fetching their doll-children, showing them the schoolyard model, and pretend-playing the dolls' activities in the model schoolyard.

The researchers carefully photographed the schoolyard models, not only for documentation purposes but also to show respect for the children's efforts, as the models could not be stored permanently. Photographs were distributed digitally to the schools, where they were shown to children, parents, and personnel in slide shows.

The researchers analyzed the recorded videos and, when needed, separate soundtracks for accounts of environmental qualities, features, and affordances. To index the environmental qualities, we used "affordances for children's environments" (Kyttä, 2003, p. 63). We further explored whether our data yielded any other affordances and added these. Guided by this analysis, we summarized the environmental qualities and affordances for which the children advocated. Along with this analysis, we also noted the children's reasoning about environmental qualities and affordances in their designs of the future schoolyards.

Results

Desired Environmental Qualities and Affordances

The groups of children followed the same pattern, initially suggesting features and environmental qualities already existing in their schoolyard. Standard Swedish primary schoolyard equipment affording climbing, swinging, sliding, digging, and playing ballgames were suggested by most groups and in most cases by all the children in the groups. In fact, a common way for a child to justify a feature in the envisioned schoolyard was by referring to its presence in the schoolyard today. Often, they suggested features that were additions or supplements to the existing features, just a bit bigger, cooler, or fancier, such as higher slides and nicer climbing frames or more soil for growing flowers, and in some cases an expanded schoolyard area, affording more running and play opportunities in general. However, during the multimodal process of creative model-making and conversation, the children became increasingly innovative and came up with more and more inventive ideas suggesting and constructing features not yet available such as a zoo, "animal places," playgrounds for domestic animals, tree houses, and digital playgrounds with access to digital devices and games.

Flat Surfaces and Slopes

In the children's models of their desired future schoolyard, the need for flat surfaces was a reoccurring theme affording playing games. The children created soccer fields, floorball/ floor hockey rinks, and basketball hoops. Playing soccer was mentioned in connection with a running track, which children said can be used for running contests, and, as Paula[2] suggested, "You can play soccer there." Another child responded, "Yes, unless others want to run on the track [at the same time]." Concerning ground cover, many children proposed asphalt, while others preferred grass so that their imagined children would not hurt themselves. Proponents of asphalt argued that a lawn would be torn up by children constantly running over it. Other children proposed plastic grass to solve this problem. One boy, Fredric, wanted asphalt in the yard; when asked why, he responded, "because it is [already] in the yard." Six groups wanted parking lots, both for parents' and staff's cars. These were sometimes placed outside and sometimes inside the schoolyard. One boy (Alvin) said there should be parking lots "so that the parents can come and fetch the children," and another (Robert) said that the teachers "must have somewhere to park their cars." One girl (Jessica) wanted more parking lots "so that you don't get fined wherever you park." She said this happens even when parents just let their children off and suggested trees and bushes could be removed to make room for more parking lots (Figure 4 and 5).

Figure 4. Model showing a desired area for parking next to the school building for easy access for parents of future children and staff

[2] Children's names have been replaced with pseudonyms.

Figure 5. Model showing parking lots, football field, swings, rink for skating and floorball/ floor hockey. One child lets her doll balance, and another doll is a goalkeeper in the soccer field

Not all the children advocated for more parking lots, however. In one group, when the children were discussing that the future schoolyard needed more space, Gabriel remarked that "parking lots are pretty unnecessary," suggesting that they could be removed to make more space for children's activities in the schoolyard.

Fencing was suggested in seven groups, for example to protect the children from being hit by cars (Emmanuel). Alvin pointed out the need for a gate in the fence, through which their children could enter the schoolyard.

Also notable in the children's descriptions of their desired future schoolyard were hills and slopes, often with grass, and in one case with a sand beach. Again, these kinds of features were outlined as multifunctional, affording activities such as running, rolling, and sledding as well as a place where one can sit and have a snack. The area with hillocks and *Salix* bushes was a "favorite place" at the future school, according to Maria. While constructing a hill, children in one group remarked that the hill was getting too high, higher than some school buildings, and that it consequently would be dangerous for the children.

Climbing, Sliding, and Swinging Affordances

Features affording climbing, sliding, and swinging were frequent in the models. Climbing frames, climbing towers, and slides, at times mentioned in combination, affording possibilities to climb, do acrobatics, exercise, relax, play different games, and slide down from were mentioned several times. Ten children described slides as

fun and exciting, thus generating a variety of what could be described as emotional affordances, affording a joyful mood, a merry feeling, amusement, and exuberance. In two of the groups, children suggested a ladder to the main building's roof, making it possible to slide down from the rooftop. Emmanuel took the opportunity to revolt against the perceived norms of socialization by letting his imagined child sit on the school roof and throw stones at children playing in the schoolyard. This suggestion was just ignored by the other children in the group. Vladimir let his doll-child climb up on the school building roof to fetch a soccer ball that had landed there.

In contrast to those who let their children climb up and slide down the roof, other children advocated the need also for a small slide; otherwise, explained Elisabeth, "a child falls down."

Other features affording climbing that were mentioned included rocks, different climbable deciduous trees, and even a spruce tree. The latter also afforded a place to hide. Even a basketball hoop could be used for climbing and as a lookout tower. In one of the schools, children mentioned an obstacle course, made for jumping and crawling, as a feature also affording climbing, again highlighting the multifunctionality of the schoolyard features. Swings, both in the form of the more traditional swing set and a big round BuddyRider were mentioned, affording places for resting and an activity when you did not have anyone to play with. For example, Robert said that if the children "want to rest, they should just rock a little." "My child misses the swings," he added.

Digging and Constructing Affordances

In the children's outline of their desired future schoolyard, more than a third of the children suggested sand and clay, affording molding. The children constructed sandboxes and mentioned that they afforded amusement, play, digging, and constructing sand features such as castles. Some also explained that the sandbox could be useful to land in safely if their children happened to fall from the climbing frame or when using the swings or slides. Putting edges around the sandbox was suggested by some children, and one said edges around the sandbox help since "if they scatter sand, it doesn't come outside, and when they fall, they don't fall outside." According to Elena, the quality of sand was important too: there should not be "gravel-sand" as they have presently, but "ordinary sand." Otherwise, "when rocking and jumping [from swings], you can scrape up your whole leg," her friend Jessica explained. There were, however, a couple of the children who opposed the suggested sand, arguing that sand tends to get everywhere.

Animals in the Schoolyard

Playing with animals in the schoolyard was not an available affordance in any of the current schoolyards. The animals present in their schoolyards today, according to the children, were insects, slugs, and spiders and visiting wild birds and squirrels and those didn't seem to afford playing. In six of the groups, children showed enthusiasm for including other animals in the future schoolyard, even though in most cases they suggested this quite late in the workshop process. On some occasions, the children did not come up with the idea spontaneously but needed a

question from the researchers such as "do you think it would be a good idea to have animals in the schoolyard?" whereby the children got very excited and made many suggestions. Most popular were domestic animals such as dogs, cats, parrots, guinea pigs, hamsters, and rabbits. Some wild animals, such as hedgehogs, turtles, coral, fish, snakes, and ducks were also mentioned, merely as affording aesthetic experiences and opportunities for feeding, making nests and caring in general (Figure 6).

Figure 6. A zoo with different animals. The walls around the zoo will protect people from having allergic reactions.

Children who objected to having animals in the schoolyard noted that some people may have allergic reactions to animals. In one group, Judith suggested an "animal place" with guinea pigs and a white rabbit. All four children in her group agreed, although Samuel hesitated, first raising the idea of placing it in a remote corner of the schoolyard, then saying "We are not allowed, because what if someone is allergic?" Jennifer responded, "I have a very good idea. We can have a fence here and those who are allergic can just watch the animals [from the outside], and those who aren't, they can go inside, so there can be a gate here." The allergy issue was raised by all the groups who wanted animals in the schoolyard, and suggested solutions were different kinds of fences, walls, or glass cages, the latter to prevent allergens spreading by wind.

While wild animals were considered a threat by some children, others were enthusiastic about including them in the schoolyards. Hannah objected to Sarah and Dorothy's (two of her group mates) suggestion to have hedgehogs in the schoolyard because the children "will touch them." Sarah responded that "hedgehogs are afraid of humans," and Dorothy suggested that "we can have a little nest here, a small yard so that the hedgehogs cannot go out," then explaining that the hedgehogs "won't be close to the children." Still, Hannah was unconvinced, referring to the hedgehogs' "stings." Sarah responded, "You have to be cautious not to touch them." She then invited her group mates to "make them a little nest," and Hannah joined in, suggesting they make different colored leaves for the nest. Creating nests for wild animals and playgrounds for domestic animals were other suggested activities in some of the groups.

Trees, Bushes, Plants, and Fungi

Children in both schools had access to trees and bushes in their schoolyards, and all the groups except two constructed trees in their future schoolyard models, often referring to tree species or individual trees that were already present in their schoolyards. After finishing the model yard, one girl (Julia) enthusiastically uttered "What a lot of trees! It looks like a jungle." There were large differences among the children's preferences for trees. While one child said, "I think it is super nice [to have trees in the schoolyard]," others seemed to take trees for granted. Eight children referred to "general trees," generic features that should just be there, while others suggested specified species such as oak, fir, beech trees, and specific fruit trees and provided different motives for including these trees. Trees were assigned multiple affordances by the children. Alex explained that we live off trees and you can climb them. Without trees we would all die almost instantly, he explained. One can also make paper from them, he added. When asked why we would all die without trees, he said "it is difficult to explain... very difficult to explain." In another group, Tobias stated that trees "are good for nature," without further explanation. In another group, Carl explained the value of trees, saying that "they [the children] can't get oxygen otherwise." Frank, in the same group, later explained that "If there weren't trees around, you would not be able to breathe," adding that it can "also be nice with trees."

Children suggested trees for climbing, although tree climbing was not allowed in their schools today. That could change in 30 years, some of the children declared. A thick tree with long branches to accommodate many children were suggested by one group of children.

Tree houses where their children could sit and "munch" locally produced fruit and berries was a popular theme among some children, who suggested having strawberries, blueberries, and unspecified fantasy trees and "berry trees" (Elli) in the schoolyard. Fruit trees such as apple and pear were popular for their fruit that children can eat "when they are hungry" (Angela). "You can pick apples and have them in a fruit salad or something" (Alex). A few children also suggested that the schoolyard should contain both poisonous and edible mushrooms. (Figure 7).

Figure 7. A schoolyard model with a small forest with fungi, trees, and a pond for frogs

Different kinds of flowers (roses, tulips, and "those yellow flowers") were suggested for their aesthetic affordances and one boy (Alvin) also highlighted their scent as a reason to plant them. As with the discussions about animals, discussions about plants brought up the issue of allergens. In many cases, this led to the decision to only allow plastic flowers. Also for practical reasons, some of the groups wanted different plastic plants, and one group wanted a plastic forest, which is easy to clean. One girl explained that the children would not need to worry about getting dirty clothes.

Discussion

The study aimed to investigate how children's perspectives on what makes the best possible schoolyard can be illuminated through a participatory envisioning workshop. We conclude that all the environmental qualities proposed by Kyttä (2003, p. 65) were suggested by the children as well as almost all the affordances (with a few exceptions such as playing hopscotch and playing war). The results showed that children's suggestions for a future schoolyard in the initial conversation were dominated by reproduction of what was already present in their schoolyards. Affordances provided by standard Swedish primary schoolyard equipment was suggested by most groups and in most cases by all the children in the groups. In some cases, these suggestions were combined with a desire to make extant features bigger, higher, or fancier. In the latter phase of the workshop, however, the model-making process did clearly appear to spur the children's imagination and expand their potential to think outside the box more than the initial conversation

had. This shows that the multimodal design was important for a richer result with innovative examples of features and affordances that exceeded those presently available. New suggestions came during the hands-on activities, when the children were relaxed and engaged, in a flow-like state. Trees, included in the categories graspable/attached objects and climbable features (Kyttä, 2003), were attributed a greater variation further into the creative process. Trees afforded climbing in the future schoolyard even though climbing was not permitted today. Also being in peace and quiet in tree houses was suggested. Some children also added other multiple affordances to trees supporting life in general, such as through oxygen production for breathing, and fruit production affording eating and munching. Also ponds, forests, flower beds, pets, and wild animals were suggested in the model making phase. The idea to have pets and wild animals in the schoolyard was met enthusiastically by some children, although it also gave rise to arguments about children's safety, which in turn stimulated innovative ideas for protecting allergic people. Even in cases where the children did not spontaneously suggest including animals, many were very positive when the researchers asked for the children's opinions at the very end of the session. Norðdahl and Einarsdóttir (2015) reported that whereas some preschool children were drawn to animals in their schoolyard and wanted to pet and feed them, others were happier to view them from a distance. Furthermore, many primary school children who had experience with animals from preschool wanted to have animals in their schoolyard (Norðdahl & Einarsdóttir, 2015). The children in our study did not relate to any experiences of animals in the yard from preschools or other schools, which may explain why the idea was raised spontaneously only in a few groups. Presumably, without prior experiences, it is difficult to come up with an idea, no matter how attractive it appears once presented.

Remarkable was that several groups expressed an urgent need for more parking places, even at the expense of a play area. One possible interpretation is that this illustrates children's difficulties presenting perspectives, outside the dominant societal discourse, that are different from adults'. As suggested by Einarsdóttir, "Children's voices reflect the environment of which they are part" (2007, p. 207). Living in a society where cars, parking places, and streets dominate the landscape, it may be difficult for children to envision something different. Another possibility is that children's references to parking lots are an example of how the envisioning workshop, where the children are encouraged to think like parents, enabled them to take an adult's perspective when considering the possible affordances of a flat, smooth surface. The children may have learned to see the environment through what they perceived as their parents' and teachers' eyes, possibly explaining their interest in parking spaces. Kyttä (2003) argues that the utilization, perception, and shaping of potential affordances by an individual can be promoted, restricted, or unaffected by other individuals (such as parents) or by sociocultural norms and that the structure of the schoolyard itself conveys such sociocultural norms as how and where children should play. Through the design of existing schoolyards (and playgrounds), children are implicitly taught what they are supposed to do outdoors, how to perceive the affordances of a schoolyard and its features, and how to use it. Also, by observing their peers, children learn what is appropriate to do in a schoolyard at different ages (Kyttä, 2003). For children to participate in or observe

schoolyard activities is for them to participate in a process of socialization that may also contain implicit and explicit information on what is not appropriate to do in a schoolyard and what potential affordances are inappropriate to use.

In the research and development project that formed the context of the study by Norðdahl and Einarsdóttir (2015), the children were included as stakeholders, and they had an impact on how the schoolyard was designed, such as that the parking lot was changed into a green play area. In contrast, it is evident from our results that it cannot be assumed that children's voices always advocate greener and, from an adult researcher's point of view, more ecologically sustainable and healthier schoolyards. Several children's proposal to use a larger part of the schoolyard for parking is one example, and the plastic, easy-to-clean forest and plastic grass is another. Maybe this is a consequence of the method that puts children in the pretend play adult role, which they associate with what values are and probably will be prioritized by adults? Maybe the high priority for easy parking is a result of stressful morning moments with impatient parents in the car? Nevertheless, if children's right to participate in society is taken seriously, their ideas need to be thoughtfully considered. Although children have historically been depicted as closely connected to nature (Halldén 2009; 2011; Taylor, 2013) and possessing creative abilities, we cannot expect them to have an inherent competence to handle questions of sustainability and to present coherent solutions. Collaboration between children and adults of different ages can accomplish more in developmental work (Francis & Lorenzo, 2002; Iltus & Hart, 1995). We argue that envisioning workshops can be one fruitful way to accomplish such collaboration, combining imagination and play with conversation that transmits different experiences and knowledge.

To imagine a not-yet-existing, desirable future is intellectually demanding, and it takes visionary input, time to reflect, and time to explore, as well as tools and time to analyze consequences of different choices. During the envisioning workshop, we noted children's serious commitment to, and tremendous joy in, the playful creative task. We also noted a surprisingly high level of willingness to compromise and solve conflict and an interest in listening to each other's arguments and productively responding. The workshops offered children practice in exploring opportunities, consequences of choices, listening actively, solving conflict, and compromising.

One important conclusion of this study is that to make it possible for children to go beyond the present in their envisioning of the desirable schoolyard, they benefit from plenty of time and space for communication, exploration, and imagination; opportunities to relax, through using creative, hands-on tools; and chances to gain input and inspiration from others with differing experiences.

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