

Children's Right to Participate in Playground Development: A Critical Review

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Abstract

Child-friendly cities include playgrounds that can promote healthy childhoods. Children have a right to participate in the planning, construction, evaluation and management of playgrounds intended for their use. This critical review examines 14 peer-reviewed studies published from 2004–2020 focusing on children's participation in playground creation. After a search across several multidisciplinary databases, we evaluated the selected studies using the LEGEND protocol. Themes derived from the reviewed studies included children's playground preferences and participatory experiences, as well as adult perceptions of youth involvement. Our analysis exposed gaps, inconsistencies and benefits associated with child participation. We offer recommendations for future engagement of children in playground development.

Keywords: children's participation, landscape architecture, playgrounds, urban design

Introduction

The well-being of children is one important indicator of a healthy habitat and a democratic society (Korean Committee for UNICEF, 2018). In democracies, the political process is intended to empower all citizens regardless of age or developmental level. Meaningful participation requires that power is shared between governmental leaders, policymakers, and those living in the community. In this context, child participation is defined as their active involvement in collaborative decision-making about issues that directly affect the everyday life of young people (Derr et al., 2018; Hart, 1992).

UNICEF projects that 70% of all children will be living in urban centers by the middle of this century. The Child Friendly Cities Initiative is a UNICEF-led program that supports municipal governments in realizing the rights of children at the local level, building on the foundation established by the UN Convention on the Rights of the Child (Korean Committee for UNICEF, 2018; UN General Assembly, 1989). This program encourages stakeholders including civil society organizations, the private sector, academia, government, media, and children themselves to establish a network with the goal of making their cities and communities more child-friendly.

There are a multitude of spaces that children inhabit, including those that were specifically designed to be used by children as well as more unconventional spaces that children feel afford them opportunities to play (Jack, 2010; Koller & Farley, 2019). One of the spaces that children frequent are playgrounds. Playgrounds are an essential element of any child-friendly community and the inclusion of children in playground design and development allows them to exercise their participatory rights as well as their right to play.

Purpose

The primary purpose of this research was to engage in a critical review of literature focusing on children's participation during the playground development process. Systematic analysis of the findings from peer-reviewed studies yielded key themes related to the planning, construction, and evaluation of playgrounds. The following discussion explores children's participation in the creation of playgrounds, as well as gaps and inconsistencies in the research. It also provides recommendations for the future and advocates for ongoing collaboration between adults and children. This can help guide community leaders, educators, city planners, and landscape architects who wish to engage children in these processes.

Historical Perspectives on Playground Design

In North America, playgrounds have been prominent features of children's outdoor spaces since the 1800s (Frost, 1992; Tai et al., 2006; Woolley et al., 2006). The first formal playground was constructed in Salem, Massachusetts in 1821; it was initially developed as an outdoor gymnasium to encourage physical activity, and imitated the design characteristics of indoor exercise areas. This type of outdoor gymnasium was discontinued due to lack of popularity, but it served as the foundation for a playground movement that grew exponentially over the next century, when rudimentary fixed play apparatuses began to emerge. They were usually built on publicly owned land allocated by the government specifically for this

purpose (Frost, 1992). Playground equipment included swings, slides, merry-go-rounds, and seesaws designed for children under the age of ten, and adults often supervised these spaces with the goal of limiting children's exposure to negative societal influences and keeping them off the streets (Woolley et al., 2006). The number of playgrounds expanded significantly until the First World War, when many of the materials used to create these structures were repurposed for the war effort.

Later, the end of the Second World War gave way to "the most innovative [period] in playground development since the turn of the century" (Frost, 1992, p. 125). New theme-based equipment, including spaceship sculptures and fantasy creatures, were integrated into outdoor environments. Adventure playgrounds also grew in popularity during the post-war period (Rorabaugh, 2019). The design of these spaces varied depending on the environment but often included loose parts and other natural materials. They provided open-ended opportunities for children to engage in social agency. These playgrounds have diminished significantly over the past few decades due to a plethora of factors including enhanced health and safety regulations, limited funding and increased focus on academic achievement (Rorabaugh, 2019).

Modern-day playgrounds have been characterized by the standardization of artificial features. "These spaces can be termed 'KFC' playgrounds consisting of a Kit of play equipment, being enclosed by a Fence and Carpeted in rubber surfacing: hence 'Kit, Fence and Carpet' playgrounds" (Woolley et al., 2006, p. 501). They are generally perceived as safe areas, but they have also been criticized for undermining the important elements of risky play, which some view as fundamental to healthy development (Sandseter, 2009).

Stages of Playground Development

Contemporary playground development can be classified into four main stages: planning, construction, evaluation, and management (Table 1; Olsen, 2015). These stages have guided the work of professional community developers and city planners, and may be adapted depending on contextual factors including geographical location, government safety regulations, and the individuals involved in creating and managing these spaces.

Table 1. Stages of playground development

Stages of Playground Creation	Key Components of Playground Stages
Planning Stage	<ul style="list-style-type: none"> • Stakeholders, building site, and community data are gathered • Overarching goals for the space are delineated • Conceptual ideas for the playground are generated and documented in visual format
Construction Stage	<ul style="list-style-type: none"> • Play equipment and other design features are installed in the environment • Assistance is obtained from professionals in regard to safety regulations
Evaluation Stage	<ul style="list-style-type: none"> • Ensure that equipment is installed properly • Project goals are reassessed • Feedback is obtained from playground users
Management Stage	<ul style="list-style-type: none"> • Park managers and playground users collaborate on sustainability

Theoretical Framework

Societal perceptions of children and childhood have changed dramatically in recent years. With the emergence of the sociology of childhood and a newfound focus on children's rights, childhood is now acknowledged as a complex and evolving process. Childhood is known to be influenced by a variety of contextual factors including culture, ethnicity, ability, gender, and socio-economic status; these factors are in constant flux and are influenced by the power dynamics between adults and children (James & James, 2004; UN General Assembly, 1989). The sociology of childhood frames children as competent individuals who are knowledgeable about their own experiences, and scholars working in this field argue that children should participate in decision-making processes, with regard to issues that concern their everyday life (James & James, 2004; Mayall, 2000). Meaningful collaborations between adults and children have the potential to benefit society and are aligned with children's rights (Hart, 1992; UN General Assembly, 1989). Integrating children within the dominant discourse enables them to engage as active citizens.

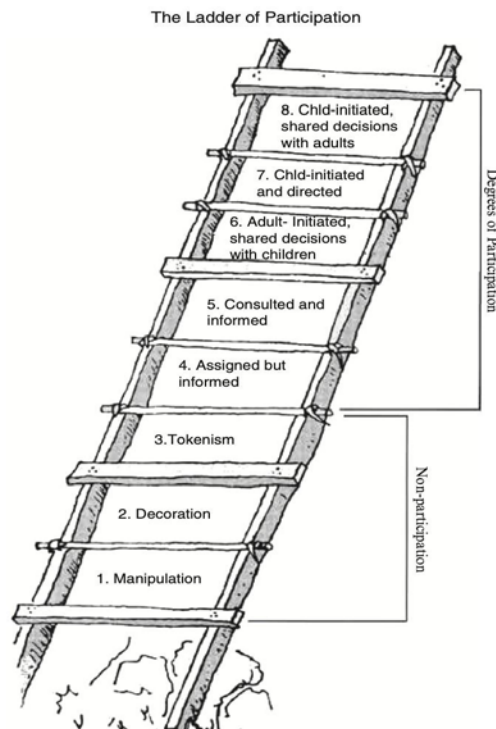
Roger Hart's Ladder of Participation

In his seminal work, *Children's Participation: From Tokenism to Citizenship*, Roger Hart defined participation as "the process of sharing decisions which affect one's life and the life of the community in which one lives" (Hart, 1992, p. 5). Hart's Ladder of Young People's Participation enables assessment of the quality of child participation when working alongside adults. As shown in Figure 1, it is divided into eight separate stages, denoting various degrees of participation. The three lowest rungs, including manipulation, decoration and tokenism are classified as non-participation. These stages are characterized by a lack of access to information, as well as limited opportunities for children to generate their own perspectives. The next five rungs of the ladder are considered forms of genuine participation: children are able to gain a comprehensive understanding of issues, engage in active

consultation, and make informed decisions. The highest level of child participation, which Hart considered the optimal form, involves child-initiated decisions that are shared with adults.

In the following discussion, Hart's Ladder serves as a complementary tool that supports the theoretical framework and allows for comparisons of the quality of child participation across studies.

Figure 1. Ladder of Participation (Hart, 2008)



Research Methods

Critical Literature Review

A critical literature review involves the collection and analysis of original studies published on a specific topic. The scope of critical reviews is typically broad, which allows the researcher to explore the topic and select articles representative of the literature (Paré et al., 2015). These reviews can include quantitative, qualitative and mixed methods research, thereby capturing a variety of methodologies (Xiao & Watson, 2019). Critical reviews promote innovative ways of interpreting data and can expose misconceptions or inconsistencies in the literature. Based on emerging descriptive analyses or interpretations, they can provide guidance for future research (Grant & Booth, 2009). These features align with the research objectives of this project: to advocate for child participation rights, expose the realities of playground development, and generate recommendations for designing future playgrounds in collaboration with children.

Search Strategy

We searched five databases for literature published within the past 16 years: GeoBase: geography, ecology and earth sciences; Scopus: health sciences, social sciences and physical sciences; PsycINFO: psychology; Education Resources Information Center [ERIC]: educational-based research; and the Avery Index to Architectural Periodicals: architectural design and landscape architecture.

We compiled a list of keywords with the assistance of a university librarian trained in search methodologies. Search terms included: *child** (children), *user*, *student*, *co-researcher*, *community*, *design*, *planning*, *management*, *evaluation*, *assessment*, *development*, *construction*, *renovation*, *retrofit*, *renewal*, *participation*, *involvement*, *inclusion*, *perspective*, *opinion*, *attachment*, *playground*, *green space*, *landscaping*, *architecture*, *play space*, *community park* and *public park*.

Inclusion Criteria

The primary question that guided our research was: What is the role of children within the playground development process? Our three sub-questions were: 1) What are children's preferences for playground design? 2) What factors may influence the quality of child participation during the creation of playgrounds? 3) What methods are used to engage children within these collaborative processes? These questions represent the main areas examined in the research. In particular, we focused on the subjective experiences of participants as reported through a range of methods (Table 2).

The initial search focused on original peer-reviewed studies published between January 2004 and August 2020. Relevant articles presented research involving qualitative, quantitative, and mixed methods; art-based research; and community-based participatory research. In accordance with the objectives of this critical review, we only included studies in analyses if they incorporated children (aged 2–12 years) in some capacity during the planning, construction, evaluation, or management of playground spaces.

Our study defined playgrounds as “settings that typically include equipment specifically designed and built for children. These environments are generally available to the public, and found in public parks, schools, and pre-schools” (Moore & Lynch, 2015, p. 332). They can be located in urban, suburban or rural communities. Because the focus here was on the playground development process, the completion of a playground was not required for a study to be included in our analyses.

Exclusion Criteria

We excluded abstracts, conference papers, books, systematic reviews, and gray literature. Moreover, studies evaluating individual playground components such as surface materials, play equipment, and fencing were not eligible for inclusion in this study, nor were studies exploring government policy and legal requirements in relation to the installation of playground spaces, or studies that focused on how playground design affected children's play.

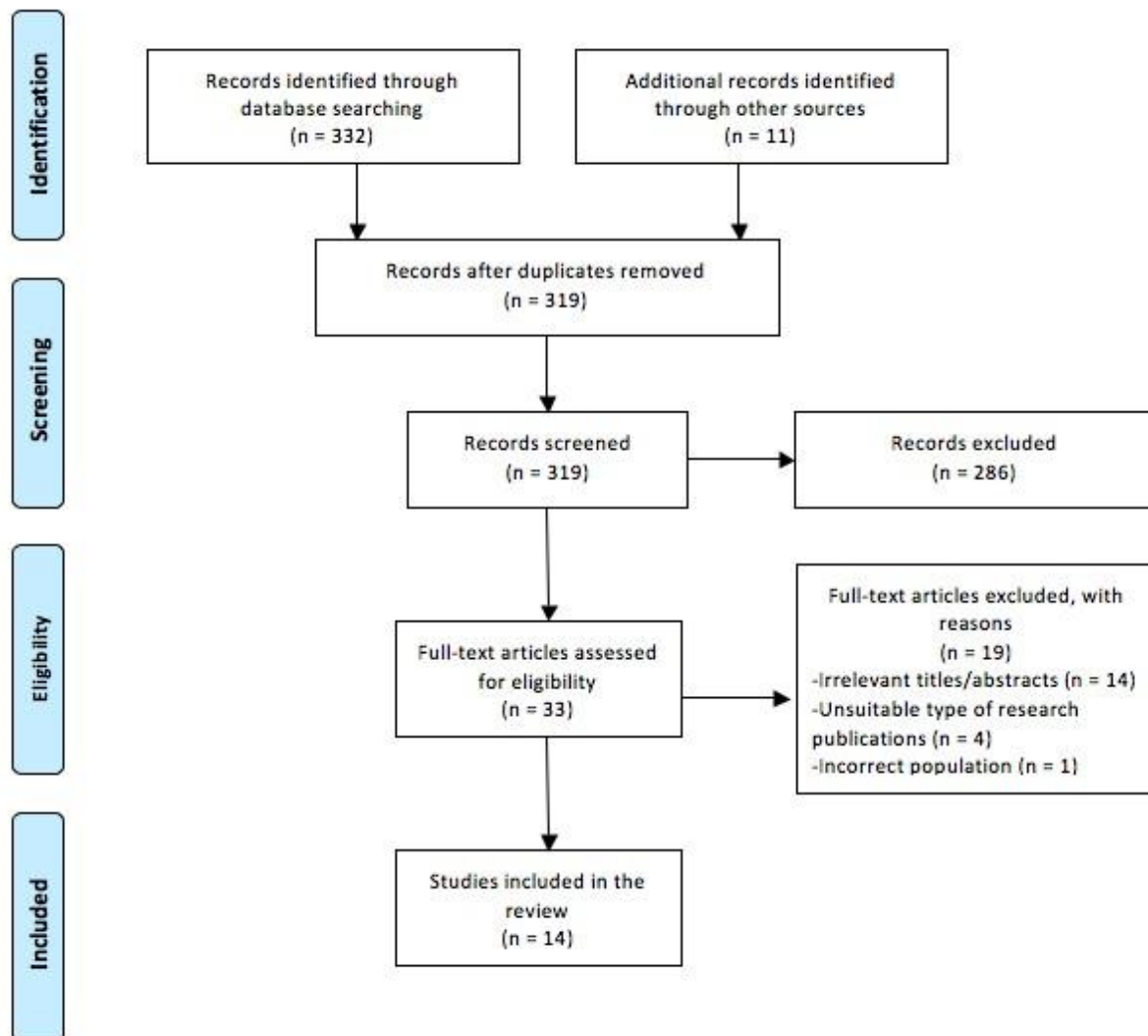
Table 2. Inclusion Criteria

Primary Research Question	<ul style="list-style-type: none"> • What is the role of children within the playground development process?
Sub-Questions	<ul style="list-style-type: none"> • What are children's preferences for playground design? • What factors may influence the quality of child participation during the creation of playgrounds? • What methods are used to engage children within these collaborative processes?
Population	<ul style="list-style-type: none"> • Children (2-12 years old) • Any adults that worked in collaboration with the children
Intervention	<ul style="list-style-type: none"> • Study must have focused on children's participation during at least one stage of playground development • Project did not have to result in the actual creation of a playground
Outcomes	<ul style="list-style-type: none"> • Subjective experiences of participants (children and adults) as reported through a range of methods
Study Design	<ul style="list-style-type: none"> • Qualitative research • Quantitative research • Mixed methods research • Arts-based research • Community-based research
Setting	<ul style="list-style-type: none"> • Urban, suburban or rural communities

Data Extraction

We searched the literature on a monthly basis from May 2019 to August 2020. In total, 332 studies emerged from electronic searches, with an additional 11 sources found through hand searching. We imported all citations into *Mendeley* software, which we used to identify and remove 24 duplicate studies (Francavilla, 2018). A final screening yielded 33 studies that were reviewed by the researchers and assessed for eligibility in accordance with inclusion criteria. The data extraction process, Preferred Reporting Item for Systematic Reviews and Meta-Analyses (PRISMA), is represented in Figure 2.

Figure 2. PRISMA Flow Diagram (Moher et al., 2009)



Assessment Tools

Following evaluation of the 33 studies, we excluded 19 due to irrelevant titles/abstracts, unsuitable type of research publications, or incorrect population. We evaluated the remaining 14 studies using Let Evidence Guide Every New Decision (LEGEND), an instrument that was originally developed by professionals at Cincinnati Children's Hospital Medical Center (Clark et al., 2009). This tool was selected in collaboration with the Early Childhood Studies librarian at Ryerson University who had valuable knowledge and experience that was relevant to the process of conducting a critical literature review.

The primary purpose of LEGEND is to create "a set of tools to guide standardized quality processes using language friendly to multiple disciplines" (Clark et al., 2009, p. 1054). It has been applied in many systematic reviews (e.g., Giambra et al., 2014; Goldschneider et al., 2014; McGinagle et al., 2019). "LEGEND's algorithm

provides decision points to determine the study design of the article, allowing the user, through guided questions, to find the most appropriate evidence appraisal form by study design and domain" (Clark et al., 2009, p. 1057). The tool is used to assess the overall quality of an article: good quality, lesser quality, or not applicable or credible (Clark et al., 2009). Using this tool, we classified all 14 studies discussed below as good quality studies.

Findings and Discussion

This section begins with an overview of the studies, specifically with regard to playground and participant characteristics. Next, we organize the findings that were generated from these studies into three main themes and analyze them in accordance with the theoretical framework.

Descriptions of the Studies

Playground Characteristics

Seven of the fourteen studies examined a playground that had been created at the time of publication (Khan et al., 2020; Kreutz et al., 2018; Malone, 2013; Norðdahl & Einarsdóttir, 2015; Özdemir, 2019; Pawlowski et al., 2019; Yates & Oates, 2019). These installations were located at schools (n=4) and public parks (n=3). Additionally, four studies were conducted with the intention of using the research findings for the development of a playground but at the time of publication, it was unclear if the physical playground structure had been built (Nah & Lee, 2016; Pearson & Howe, 2017; Polyzou et al., 2017; Menconi & Grohmann, 2018). All four of these playgrounds were intended to be constructed on school grounds (n=4), with the exception of one playground that was slated to be developed at a childcare center (n=1). The remaining three studies did not result in the completion of a playground (Bosco & Joassart-Marcelli, 2015; Lozanovska & Xu, 2013; Xu & Izadpanahi, 2016).

Participant Characteristics

Studies engaged preschool and school-aged children aged 5–13 years. Five achieved a gender balance (Khan et al., 2020; Malone, 2013; Menconi & Grohmann, 2018; Norðdahl & Einarsdóttir, 2015; Pearson & Howe, 2017), and one had a significant gender divide (Pawlowski et al., 2019). With regard to the remaining studies, we assumed that children of all genders were included unless otherwise stated. Two studies indicated that children with disabilities might have been included but the degree of their participation was not explicit (Menconi & Grohmann, 2018; Pearson & Howe, 2017). There was also a lack of clarity regarding the races of child participants who were involved in the studies, but based on the locations of two studies, we assumed that most participants were people of color (Khan et al., 2020; Nah & Lee, 2016). Three studies included children living in low-income neighborhoods (Bosco & Joassart-Marcelli, 2015; Pawlowski et al., 2019; Yates & Oates, 2019). In conclusion, the majority of participants were wealthy, school-aged children, of any gender, who were typically developing and living in the Global North.

Exclusion of Children from the Participatory Process

In most studies (n=13), adult stakeholders primarily relied on convenience sampling to determine how children were recruited for the project. Children were often selected because they had personal connections to a space that was scheduled for development (e.g., schoolyard, public park) or because they had prior relationships with the adults spearheading the project. A reliance on this sampling technique inadvertently created representational disparities for children with disabilities, children living in low-income communities, and young children.

Children with Disabilities

Two studies indicated that children with disabilities might have been included within their sample but it was unclear to what degree these children played an active role in the project (Menconi & Grohmann, 2018; Pearson & Howe, 2017). Children with disabilities are among the populations most likely to be excluded from collaborative projects (Derr et al., 2018), which is particularly problematic given that playground features are often inaccessible to them (Yantzi et al., 2010). All children, regardless of their abilities, should be provided the opportunity to exercise their participation rights (Wenger et al., 2021). Inclusivity entails ensuring that the recruitment process for child participants does not exclude those with disabilities, as well as offering individualized accommodations and accepting continuous feedback (Wenger et al., 2021).

Children Living in Low-Income Communities

Children living in low-income communities are also often marginalized from the playground development process (Bosco & Joassart-Marcelli, 2015; Pawlowski et al., 2019; Yates & Oates, 2019). Low socioeconomic status has been identified as a social determinant of health and is known to affect individuals throughout their lifespan due to limited access to resources (Moss, 2010). Children living in lower-income communities might have different play experiences than children living in higher-income areas (Bosco & Joassart-Marcelli, 2015; Pawlowski et al., 2019). The lack of safe play spaces in these neighborhoods can inhibit opportunities for physical activity and forming social connections (Rogers, 2012).

Young Children

Six studies included preschool children (Malone, 2013; Menconi & Grohmann, 2018; Nah & Lee, 2016; Norðdahl & Einarsdóttir, 2015; Pearson & Howe, 2017; Yates & Oates, 2019), but only one focused exclusively on this population (Nah & Lee, 2016). Young children have been traditionally excluded from these processes when compared to school-aged individuals (Derr et al., 2018; Ataol et al., 2019). The lack of research with this demographic is disconcerting: playgrounds are often intended for use by children as young as 18 months (Canadian Standards Association, 2014). If young children are expected to play in these spaces, they also have the right to participate in their development. A range of innovative methods could be modified for use with younger children (Johnson et al., 2014). For example, visual methods such as photographs and drawings can foster inclusivity and provide opportunities for children to engage in research through nonverbal means (Einarsdóttir, 2007).

Table 3. List of included studies

Reference	Purpose of Study	Methods	Sample	Results
1. Planning Stage of Playground Development				
Bosco & Joassart-Marcelli (2015) USA	Explore children's emotional labor by analyzing a collaborative project involving green spaces.	Methods used with Children: <ul style="list-style-type: none"> Visual methods Focus groups Methods used with Adults: <ul style="list-style-type: none"> Observations 	Child Participants: <ul style="list-style-type: none"> 12 children between the ages of 9 and 11 Adult Participants: <ul style="list-style-type: none"> Landscape Architects 	Children's drawings depicted nature, private places and traditional play equipment. Adults stifled children's emotions (e.g., silliness) and tokenized their contributions.
Khan et al. (2020) Bangladesh	Explore children's, teachers' and parents' preferences for learning, socializing and playing outside at primary schools.	Methods used with Children: <ul style="list-style-type: none"> Focus groups Visual methods Methods used with Adults: <ul style="list-style-type: none"> Focus groups 	Child Participants: <ul style="list-style-type: none"> 16 girls and 13 boys between the ages of 8 and 12 Adult Participants: <ul style="list-style-type: none"> School staff Families 	Children preferred both natural and artificial features as well as social and private spaces.
Kreutz et al. (2018) USA	Study the process of school children participating in the design of a park.	Methods used with Children: <ul style="list-style-type: none"> Focus groups Visual methods Methods used with Adults: <ul style="list-style-type: none"> Interviews 	Child Participants: <ul style="list-style-type: none"> 10 children between the ages of 10 and 13 Adult Participants: <ul style="list-style-type: none"> Project manager City representatives Landscape architects School staff Families University students Senior citizens 	Final designs did not match children's ideas. Adult attitudes towards participation varied greatly.
Lozanovska & Xu (2013) Australia	Propose a pedagogical model for children's genuine participation in architectural design and education.	Methods used with Children: <ul style="list-style-type: none"> Visual methods 	Child Participants: <ul style="list-style-type: none"> 90 children between the ages of 7 and 9 Adult Participants: <ul style="list-style-type: none"> University students Architects Community members Families School staff 	Children and adults enjoyed collaborating with each other. Adults should engage children using multiple methods (e.g., storytelling, model-making).

<p>Menconi & Grohmann (2018)</p> <p>Italy</p>	<p>Develop a transferable method to retrofit a school playground and build alliances between schools, public administration and universities.</p>	<p>Methods used with Children:</p> <ul style="list-style-type: none"> • Surveys • Visual methods • Computer software <p>Methods used with Adults:</p> <ul style="list-style-type: none"> • Workshops • Discussions 	<p>Child Participants:</p> <ul style="list-style-type: none"> • 157 girls and 131 boys between the ages of 5 and 10 <p>Adult Participants:</p> <ul style="list-style-type: none"> • University students • School staff 	<p>Children enjoyed making models and seeing their designs digitally represented.</p> <p>Teachers were initially skeptical of the participatory process.</p>
<p>Nah & Lee (2016)</p> <p>South Korea</p>	<p>Examine how children's participation can be actualized when engaging in the development of playgrounds.</p>	<p>Methods used with Children:</p> <ul style="list-style-type: none"> • Observations • Field notes • Audio and visual recordings • Visual methods • Field trips <p>Methods used with Adults:</p> <ul style="list-style-type: none"> • Interviews • Journals • Emails and telephone conversations 	<p>Child Participants:</p> <ul style="list-style-type: none"> • 25 children between the ages of 5 and 6 <p>Adult Participants:</p> <ul style="list-style-type: none"> • School staff 	<p>Children liked using cameras.</p> <p>Adults developed attentiveness and respect for children's views.</p>
<p>Norðdahl & Einarsdóttir (2015)</p> <p>Iceland</p>	<p>Enhance awareness of young children's preferred outdoor activities and environment.</p>	<p>Methods used with Children:</p> <ul style="list-style-type: none"> • Interviews • Observations • Walking tours • Visual methods <p>Methods used with Adults:</p> <ul style="list-style-type: none"> • Interviews • Meetings 	<p>Child Participants:</p> <ul style="list-style-type: none"> • 100 children between the ages of 4 and 5 • 189 children between the ages of 6 and 9 <p>Adult Participants:</p> <ul style="list-style-type: none"> • School staff 	<p>Children enjoyed playgrounds that facilitated risky play, but also wanted the space to be more safe.</p> <p>Children liked interacting with nature, playing in private places, and socializing with peers.</p>

<p>Pearson & Howe (2017)</p> <p>UK</p>	<p>Provide a critical account of a small research project that attempted to involve children in the redesign of their school playground.</p>	<p>Methods used with Children:</p> <ul style="list-style-type: none"> • Focus groups • Visual methods • Questionnaires <p>Methods used with Adults:</p> <ul style="list-style-type: none"> • Scoping meetings • Questionnaires • Focus groups 	<p>Child Participants:</p> <ul style="list-style-type: none"> • Children between 5 and 12 <p>Adult Participants:</p> <ul style="list-style-type: none"> • School staff 	<p>2/3 of children felt that adults listened to them, but only 1/3 of children felt that their peers listened.</p> <p>3/4 of children felt confident their ideas would be taken and used by adults.</p>
<p>Polyzou et al. (2017)</p> <p>Greece</p>	<p>Evaluate an adapted drawing program to gain child perspectives regarding the development of their play spaces.</p>	<p>Methods used with Children:</p> <ul style="list-style-type: none"> • Walking tours • Discussions • Questionnaires • Visual methods • Computer software 	<p>Child Participants:</p> <ul style="list-style-type: none"> • 116 children between the ages of 10 and 12 	<p>75% of children stated that they enjoyed digital drawing more than hand drawing.</p> <p>93% of children said that they were satisfied with their drawings and found the software helpful.</p>
<p>Xu & Izadpanahi (2016)</p> <p>Australia</p>	<p>Explore children's creative potential and achieve co-designing outcomes.</p>	<p>Methods used with Children:</p> <ul style="list-style-type: none"> • Visual methods • Interviews • Questionnaires <p>Methods used with Adults:</p> <ul style="list-style-type: none"> • Interviews 	<p>Child Participants:</p> <ul style="list-style-type: none"> • 48 children between the ages of 10 and 12 <p>Adult Participants:</p> <ul style="list-style-type: none"> • University students 	<p>Children enjoyed interacting with university students while participating in various activities.</p> <p>Students had to balance fostering children's creativity without controlling them.</p>
<p>Yates & Oates (2019)</p> <p>UK</p>	<p>Provide insight into children's views about their play choices and the challenges involved with child participation.</p>	<p>Methods used with Children:</p> <ul style="list-style-type: none"> • Visual methods • Discussions 	<p>Child Participants:</p> <ul style="list-style-type: none"> • 60 children between the ages of 6 and 7 <p>Adult Participants:</p> <ul style="list-style-type: none"> • University students 	<p>Children valued nature, traditional play equipment, risky play and safety.</p>

2. Combination of Planning, Construction and Evaluation Stage of Playground Development				
Malone (2013) Australia	Meaningfully involve children in the design of a new development, incorporating their preferences and visions of the space.	Methods used with Children: <ul style="list-style-type: none"> • Surveys • Visual methods • Site visits • Discussions Methods used with Adults: <ul style="list-style-type: none"> • Interviews 	Child Participants: <ul style="list-style-type: none"> • 30 kindergarteners between the ages of 5 and 6 • 120 children between the ages of 9 and 10 Adult Participants: <ul style="list-style-type: none"> • Urban developers 	Children wanted to socialize, explore nature, take risks and feel safe. Adults built relationships with the children and wanted to collaborate with them in the future.
Özdemir (2019) Turkey	Investigate the methodological approach when children actively participate in every stage of the planning process.	Methods used with Children: <ul style="list-style-type: none"> • Participatory questioning action method • Child conferencing • Participatory action wall 	Child Participants: <ul style="list-style-type: none"> • 20 children between the ages of 9 and 10 Adult Participants: <ul style="list-style-type: none"> • Project facilitator • Technical staff 	Children preferred features that facilitated risky play, group games and the exploration of nature.
Pawlowski et al. (2019) Denmark	Explore the effects of children's involvement in creating playable installations.	Methods used with Children: <ul style="list-style-type: none"> • Site investigations • Visual methods • Surveys • Interviews • Accelerometer • GPS Methods used with Adults: <ul style="list-style-type: none"> • Interviews 	Child Participants: <ul style="list-style-type: none"> • 39 children between the ages of 10 and 11 Adult Participants: <ul style="list-style-type: none"> • School staff 	Final designs did not match children's ideas. Teachers were initially skeptical of the participatory process.

Children's Preferences for Playground Design

Most of the studies highlighted children's design preferences during the planning and evaluation stage of playground development (n=9), and they yielded three sub-themes: risk and safety, natural and artificial features, and social and private places.

Risk and Safety

Children have a proclivity to seek out risky play experiences in a variety of environments (Norðdahl & Einarsdóttir, 2015). Risky play is often characterized by a desire to navigate heights, fast speeds, and dangerous natural elements. For example, children enjoy playing in water, exploring drainage ditches, climbing trees, and speeding down hills (Norðdahl & Einarsdóttir, 2015; Yates & Oates,

2019). Complex play structures that encourage risky play are considered extremely desirable (Menconi & Grohmann, 2018; Özdemir, 2019). Children's preferences included monkey bars, climbing walls, zip lines (Bosco & Joassart-Marcelli, 2015; Yates & Oates, 2019), laser tag, and water slides (Norðdahl & Einarsdóttir, 2015).

While children prefer risky play, they also appear to be aware of social norms regarding playground safety. Five studies found that children acknowledged the importance of safe outdoor play spaces (Bosco & Joassart-Marcelli, 2015; Malone, 2013; Norðdahl & Einarsdóttir, 2015; Pawlowski et al., 2019; Yates & Oates, 2019). Some expressed concern that open spaces would become "uncontrollable" and expose them to potential dangers in the community (Bosco & Joassart-Marcelli, 2015, p. 34).

Natural and Artificial Features

Most playground spaces consist of both natural and artificial features. Natural features include geophysical landforms (hills and fields) and natural substances (sand and water), wildlife (plants and animals), and loose materials (leaves and sticks). Artificial features include play equipment (swings, slides, and climbing frames) as well as sport facilities.

Children enjoy using their senses to explore the outdoors (Özdemir, 2019). They consider colorful flowers (Norðdahl & Einarsdóttir, 2015) and natural aromas important aspects of the playground (Khan et al., 2020). They like experimenting with materials found in nature (Özdemir, 2019). One study found that children tended to perceive the value of nature solely from an aesthetic perspective—until they were encouraged to discover alternative ways to use the space and realized that these features "could be complementary to the traditional indoor lessons" (Menconi & Grohmann, 2018, p. 78).

Some children alluded to the importance of artificial apparatuses (Khan et al., 2020; Norðdahl & Einarsdóttir, 2015; Yates & Oates, 2019). Menconi and Grohmann (2018) found that 42% of children referenced traditional play equipment when asked about the characteristics of "good" playgrounds. Khan and colleagues (2019) encouraged children to draw their ideal school ground for learning and play. The researchers found that 12% of participants' artwork included swings, slides, and seesaws. Many children desire a wider variety of artificial spaces (Norðdahl & Einarsdóttir, 2015; Yates & Oates, 2019).

Social and Private Places

Children highly value playground spaces that provide opportunities for socializing (Derr et al., 2018). These gathering places can be composed of both natural features (Khan et al., 2020; Norðdahl & Einarsdóttir, 2015; Özdemir, 2019) and artificial features (Khan et al., 2020; Menconi & Grohmann, 2018). When children were asked to identify "good" features of playgrounds, 14% of responses included athletic facilities and open fields (Menconi & Grohmann, 2018). Khan et al. (2020) found that 17% of participants' artwork, which depicted idealized playgrounds, contained images of objects required to play organized games and sports, including football (i.e., soccer) and cricket equipment. Previous research demonstrates the

importance of having access to spaces that foster relationship-building and contribute to overall well-being among children (Rogers, 2012).

Children also enjoy playing in private places (Bosco & Joassart-Marcelli, 2015; Norðdahl & Einarsdóttir, 2015). These locations allow them to spend time alone or with a small group of friends out of the watchful eye of adults. Hiding spots include tall grass, wooded areas, and playhouses (Khan et al., 2020; Kreutz et al., 2018). Private places are associated with physical and psychological risks including the possibility of being "caught" by adults playing in areas that are considered unsafe. Koch (2018) referred to the "underlife" of children, and suggested that subjective feelings of well-being emerge "when children are allowed to participate in games of the underlife in a way that does not compromise their relationship with adults and their capability to live up to prevalent rules and norms of behaviour" (p. 81).

In summary, children can effectively navigate the complexity and nuances of playground development. They value spaces that initially seem diametrically opposed and involve negotiating a balance between risk and safety, natural and artificial features, and social and private places.

Children's Perceptions of Participation

Some studies examined how children perceived their own participation during the creation of playgrounds (Kreutz et al., 2018; Malone, 2013; Menconi & Grohmann, 2018; Pawlowski et al. 2019; Pearson & Howe, 2017; Xu & Izadpanahi, 2016). In general, most children enjoyed collaboration (Malone, 2013; Pearson & Howe, 2017; Xu & Izadpanahi, 2016) and one study noted children's ability to work with peers in a meaningful and tangible way (Malone, 2013).

Another study reported that children appreciated collaborating with adults involved in the study (researchers, university students, and "playground experts") (Xu & Izadpanahi, 2016). The children looked forward to the adults visiting their school and recognized the help that they provided. These thoughts were documented throughout the children's portfolios and questionnaire responses.

Children's Perceptions of How Their Ideas Were Valued

Children's perceptions of their contributions during playground development varied widely (Kreutz et al., 2018; Pawlowski et al., 2019; Pearson & Howe, 2017). Pearson and Howe (2017) found that the children generally believed their ideas would be heard. This sentiment was reflected in a questionnaire, which was distributed to 18 child participants at the end of the planning stage. In contrast, Kreutz et al. (2018) and Pawlowski et al. (2019) found that children felt disappointed in the degree to which their opinions were acknowledged. In these studies, children's perspectives of playgrounds were gathered during the planning stage and analyzed by "professionals" who developed architectural designs. The final layout was often drastically different than what was initially discussed with the children (Bosco & Joassart-Marcelli, 2015; Kreutz et al., 2018; Pawlowski et al., 2019).

The disconnect between children's plans and the final design likely stemmed from

the dismissal of child participants following the completion of the planning stage. The exclusion of children after this integral first stage may preempt a disregard for their contributions and exposes a risk for tokenistic involvement. Despite feeling disappointed, some children appeared to accept that many of their ideas would be ignored; others were much more critical of the adults who were involved in the study and felt deceived. These emotions were expressed through children's verbal statements (Kreutz et al., 2018; Pawlowski et al., 2019).

One ethical requirement when conducting participatory research with children is to inform participants about how their ideas will be used (Derr et al., 2018; Hart, 1997). Children seemed to have different perceptions of how their ideas would be implemented. Some were confident their ideas would be taken forward and used by "experts" (Pearson & Howe, 2017); others were aware that not all of their ideas would be implemented (Kreutz et al., 2018). The discrepancy between how children understand the design process poses concerns related to the quality of participation.

Children's Perceptions of Methods

The majority of research studies referenced in this review were conducted using qualitative methods (n=9). The methods of data collection included interviews, observations, drawings, photographs, conferences, focus groups, model making activities, journaling, walking tours and community mapping. Studies that incorporated mixed methods were also present within this review (n=5). These articles tended to use at least one of the data collection methods listed above as well as quantitative methods such as questionnaires and surveys.

Technology. Children tend to like using technology to explore their environment as well as to document and present their ideas in a digital format (Menconi & Grohmann, 2018; Nah & Lee, 2016; Polyzou et al., 2017). They vastly prefer computer design software and digital cameras compared with traditional methods such as drawing (Nah & Lee, 2016; Polyzou et al., 2017). Technology can offer new intriguing experiences that hold the attention of children and allow them to represent their ideas in realistic and tangible ways.

Walking Tours/Site Visits. Children enjoy participating in site visits, which provide opportunities to interact with their surroundings and generate design ideas (Malone, 2013; Özdemir, 2019). One child participant commented, "I liked it because we got to get out of the classroom and go to the site, it was more interesting than sitting in a classroom. I would do it or something similar again. It's good kids get to be part of it and make a difference" (Malone, 2013, p. 391).

Adult Perceptions of Participation

Approximately half of the studies (n=6) included adults' perceptions of the collaborative process. These adults included university students, parents, educators, landscape architects, and municipal representatives. Their perceptions varied within and across studies, ranging from positive to negative, and some changed over time.

Positive Experiences with Participation

Many adults are enthusiastic about engaging in participatory projects with children (Kreutz et al., 2018; Lozanovska & Xu, 2013; Malone, 2013). For example, one landscape architect appreciated how children effectively communicated what play meant to them, and commented that children proposed ideas that were unique and innovative, encouraging architects to stretch their understanding of what was possible (Kreutz et al., 2018). Malone (2013) observed similar sentiments among urban developers: throughout the project, these adults formed strong, reciprocal relationships with the children and were committed to including them in future projects.

Negative Experiences with Participation

While many adults embrace collaboration with children, others may have more negative experiences (Bosco & Joassart-Marcelli, 2015; Kreutz et al., 2018; Menconi & Grohmann, 2018). Kreutz et al. (2018) noticed that one landscape architect was highly critical of collaboration: as an "expert" with valuable knowledge regarding playgrounds, this individual made a conscious effort to distance children and other community members from participating. Similarly, some adult stakeholders were resistant to the messiness of child participation, and requested that children's ideas be communicated in a more structured and organized manner (Bosco & Joassart-Marcelli, 2015; Xu & Izadpanahi, 2016).

Transformative Experiences with Participation

Adults can demonstrate the capacity to change their perspectives regarding participation (Menconi & Grohmann, 2018; Nah & Lee, 2016). Initially, adults tend to express feelings of trepidation or skepticism about the collaborative process, which is related to their unfamiliarity with these experiences (Menconi & Grohmann, 2018; Pawlowski et al., 2019). Over time, they can become more comfortable engaging with children and embrace their role within a project. Based on the literature, teachers and other professionals who work primarily with children appear to be more open to change compared to those working as municipal employees or as funding allocators (Menconi & Grohmann, 2018; Nah & Lee, 2016).

Adults' opinions on the purpose of playgrounds can change as well. One study found that teachers initially viewed the outdoors as a space to play and exercise, but as the project progressed, teachers realized that the space could be used for educational purposes and relaxation (Menconi & Grohmann, 2018). They also started to question the rigidity of playground rules and asked how these benefited or hindered play experiences. Eventually, they appreciated the value of risky play, even though it might result in minor injuries (Menconi & Grohmann, 2018; Norðdahl & Einarsdóttir, 2015).

In summary, adult attitudes towards child participation varied widely within and across studies. Some adults had positive perceptions of children's contributions during the collaborative process, acknowledging their flexibility and creativity (Kreutz et al., 2018; Malone, 2013). Others discounted children's design concepts, which resulted in their ideas being decontextualized, misconstrued, and devalued (Bosco & Joassart-Marcelli, 2015; Menconi & Grohmann, 2018). A number of adults

entered projects with a sense of skepticism, but their attitudes were shown to evolve over time. These transformative experiences were most prevalent among teachers and appeared to be associated with the meaningful relationships they had with children (Menconi & Grohmann, 2018; Nah & Lee, 2016; Pawlowski et al., 2019).

Recommendations for the Creation of Future Playgrounds

This critical analysis yielded several recommendations for creating playgrounds. These can help guide parents, community members, researchers, municipal representatives, and landscape architects when collaborating with children, and should be adapted depending on the context of each project and the child stakeholders.

Ongoing Consultation with Children

One key point is that children should be consulted throughout the entire process of playground development, especially during later stages when children are often excluded (Kreutz et al., 2018; Özdemir, 2019; Pawlowski et al., 2019). Adult stakeholders must effectively communicate how children's ideas are being incorporated into the project. This dialogue will ensure ethical research practices, help minimize tokenism and reduce differences between children's ideas and the final design (Hart, 1997). Additionally, when children are well informed about their contributions (Kreutz et al., 2018; Pawlowski et al., 2019), they are more likely to take part in future collaborations (Hart, 1992).

Engaging Children in Participatory Projects through Hands-on Experiences

It is recommended for children to explore and manipulate their environment by engaging in walking tours, site visits (Malone, 2013; Nah & Lee, 2016), 3D model-making (Meconi & Grohmann, 2018), and the use of technological devices (Menconi & Grohmann, 2018; Nah & Lee, 2016; Polyzou et al., 2017). Children vastly prefer these techniques to passive methods such as drawing and journaling (Nah & Lee, 2016; Polyzou et al., 2017; Xu & Izadpanahi, 2016). Additionally, adults should invite children to actively engage in the construction stage, for example by painting equipment, sanding wood, and digging holes (Özdemir, 2019; Pawlowski et al., 2019). It is crucial that children participate in ways that they find enjoyable and motivating (Hart, 1992).

Opportunities for Child Rights Education

Article 42 of the UN Convention on the Rights of the Child states that children should be knowledgeable about their rights (UN General Assembly, 1989). Researchers and project administrators should educate children about the parameters and value of their role when they are involved in any project. Also, experts in the field of playground design, such as landscape architects and city planners, should be aware of children's rights and the benefits associated with child participation. Ideally, this will lead to meaningful collaborations between adults and children that can decrease the likelihood of tokenism. More education about, and awareness of, children's rights can mitigate feelings of skepticism, uneasiness, and outright disdain among adults regarding children's involvement in participatory projects (Menconi & Grohmann, 2018; Nah & Lee, 2016). It is unclear to what

degree children's rights were communicated to child participants in the reviewed studies.

Adult Reflective Practice

In this context, reflective practice refers to an ongoing process of thinking about power dynamics, internal biases, and the role of authority when working with children on a project (Leavy, 2017). For example, some adult stakeholders sought out children's perspectives that were consistent with their preconceived notions, rather than genuinely listening to children's contributions (Bosco & Joassart-Marcelli, 2015; Punch, 2002). Additionally, it was difficult to determine whether the ideas expressed by child participants were truly their own or whether they were influenced by adult narratives (Bosco & Joassart-Marcelli, 2015; Yates & Oates, 2019). Adults should be willing to consider children's responses in light of existing power differentials between adults and children.

Limitations of Research

Only 14 studies that focused on children's participation during the creation of playgrounds met our inclusion criteria and assessment standards, which likely resulted in the exclusion of articles that might have contained important information. Similarly, we used a scoped definition of the term "playground" to guide the search process; this might have limited the range of outdoor play environments that were represented within the studies. A third limitation is related to the sociology of childhood, which tends to frame children in a homogenous way and may neglect to reflect how race affects children's lives. A related limitation is that most studies did not provide any demographic information other than the age of the children. Future studies on collaborative playground design should consider frameworks that account for racial and other differences between children.

Conclusions

To our knowledge, this study presents the first critical review of literature associated with children's participation in the development of playgrounds. As a critical review, an assessment of gaps, inconsistencies and strengths revealed prevalent themes and recommendations for the future. More specifically, the exclusion of young children, children with disabilities, and those from marginalized backgrounds exposes inequities in how children exercise their participation rights on issues that matter to them. Recommendations and insights regarding future playground development support the continued use of Hart's Ladder as a mechanism to assess the quality of child participation. The process of creating a playground is largely dependent on how well the adults work with children who are involved in the project. At the same time, children as social agents with their own skills and perspectives play an integral role in creating a bidirectional and collaborative synergy in these enterprises. Above all, children have a fundamental right to express their opinions regarding the design of playground spaces. If we are to foster the growth and development of child-friendly cities across the globe, then we must begin by ensuring that all children have an opportunity to exercise their rights and shape the cities in which they live.

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References

- Ataol, Ö., Krishnamurthy, S., & van Wesemael, P. (2019). Children's participation in urban planning and design: A systematic review. *Children, Youth and Environments*, 29(2), 27-47. <https://doi.org/10.7721/chilyoutenvi.29.2.0027>
- Bosco, F. J., & Joassart-Marcelli, P. (2015). Participatory planning and children's emotional labor in the production of urban nature. *Emotion, Space and Society*, 16, 30-40. <https://doi.org/10.1016/j.emospa.2015.07.003>
- Canadian Standards Association (CSA) (2014). *Children's playspaces and equipment, CAN/CSA-Z614-14 (R2019)*. <https://www.csagroup.org/store/product/CAN%25100CSA-Z614-14/>
- Clark, E., Burkett, K., & Stanko-Lopp, D. (2009). Let evidence guide every new decision (LEGEND): An evidence evaluation system for point-of-care clinicians and guideline development teams. *Journal of Evaluation in Clinical Practice*, 15(6), 1054-1060. <https://doi.org/10.1111/j.1365-2753.2009.01314.x>
- Derr, V., Chawla, L., & Mintzer, M. (2018). *Placemaking with children and youth: Participatory practices for planning sustainable communities*. New Village Press.
- Einarsdóttir, J. (2007). Research with children: Methodological and ethical challenges. *European Early Childhood Education Research Journal*, 15(2), 197-211. <https://doi.org/10.1080/13502930701321477>
- Francavilla, M. L. (2018). Learning, teaching and writing with reference managers. *Pediatric Radiology*, 48(10), 1393-1398. <https://doi.org/10.1007/s00247-018-4175-z>
- Frost, J. L. (1992). *Play and playscapes*. Delmar Publishers.

- Giambra, B. K., Stiffler, D., & Broome, M. E. (2014). An integrative review of communication between parents and nurses of hospitalized technology-dependent children. *Worldviews on Evidence-Based Nursing*, 11(6), 369-375. <https://doi.org/10.1111/wvn.12065>
- Goldschneider, K. R., Good, J., Harrop, E., Lioffi, C., Lynch-Jordan, A., Martinez, A. E., Maxwell, L. G., & Stanko-Lopp, D. (2014). Pain care for patients with epidermolysis bullosa: Best care practice guidelines. *BMC Medicine*, 12(1), 178-178. <https://doi.org/10.1186/s12916-014-0178-2>
- Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Information and Libraries Journal*, 26(2), 91-108. <https://doi.org/10.1111/j.1471-1842.2009.00848.x>
- Hart, R. (1992). *Children's participation: From tokenism to citizenship*. UNICEF International Child Development Centre. http://www.unicef-irc.org/publications/pdf/childrens_participation.pdf.
- Hart, R. (1997). *Children's participation: The theory and practice of involving young citizens in community development and environmental care*. Earthscan Publication.
- Hart, R. (2008). Stepping back from 'the ladder': Reflections on a model of participatory work with children. In A. Reid, B. B. Jensen, J. Nikel, & V. Simovska (Eds.), *Participation and learning: Developing perspectives on education and the environment, health and sustainability* (pp. 19-31). Springer. https://doi.org/10.1007/978-1-4020-6416-6_2
- Jack, G. (2010). Place matters: The significance of place attachments for children's well-being. *The British Journal of Social Work*, 40(3), 755-771. <https://doi.org/10.1093/bjsw/bcn142>
- James, A., & James, A. (2004). *Constructing childhood: Theory, policy, and social practice*. Palgrave Macmillan.
- Johnson, V., Hart, R., & Colwell, J. (Eds.). (2014). *Steps to engaging young children in research, Vol 2: The research toolkit*. Bernard van Leer Foundation. <http://www.bernardvanleer.org/steps-to-engaging-young-children-in-research>
- Khan, M., Bell, S., McGeown, S., & Silveirinha de Oliveira, E. (2020). Designing an outdoor learning environment for and with a primary school community: A case study in Bangladesh. *Landscape Research*, 45(1), 95-110. <https://doi.org/10.1080/01426397.2019.1569217>
- Koch, A. B. (2018). Children's perspectives on happiness and subjective well-being in preschool. *Children & Society*, 32(1), 73-83. <https://doi.org/10.1111/chso.12225>

Koller, D., & Farley, M. (2019). Examining elements of children's place attachment. *Children's Geographies*, 17(4), 491-500.

<https://doi.org/10.1080/14733285.2019.1574336>

Korean Committee for UNICEF (2018). *For every child, a child-friendly city*.

<https://s25924.pcdn.co/wp-content/uploads/2019/10/CFCI-Brochure-FINAL-September-2018.pdf>

Kreutz, A., Derr, V., & Chawla, L. (2018). Fluid or fixed? Processes that facilitate or constrain a sense of inclusion in participatory schoolyard and park design.

Landscape Journal, 37(1), 39-54. <https://doi.org/10.3368/lj.37.1.39>

Leavy, P. (2017). *Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches*. The Guilford Press.

Lozanovska, M., & Xu, L. (2013). Children and university architecture students working together: A pedagogical model of children's participation in architectural design. *Codesign*, 9(4), 209-229.

<https://doi.org/10.1080/15710882.2012.693187>

Malone, K. (2013). "The future lies in our hands": Children as researchers and environmental change agents in designing a child-friendly neighbourhood.

Local Environment, 18(3), 372-395.

<https://doi.org/10.1080/13549839.2012.719020>

Mayall, B. (2000). The sociology of childhood in relation to children's rights. *The International Journal of Children's Rights*, 8(3), 243-259.

<https://doi.org/10.1163/15718180020494640>

McGinige, K. L., Eldrup-Jorgensen, J., McCall, R., Freeman, N. L., Pascarella, L., Farber, M. A., Marston, W. A., & Crouner, J. R. (2019). A systematic review of enhanced recovery after surgery for vascular operations. *Journal of Vascular Surgery*, 70(2), 629-640.

<https://doi.org/10.1016/j.jvs.2019.01.050>

Menconi, M. E., & Grohmann, D. (2018). Participatory retrofitting of school playgrounds: Collaboration between children and university students to develop a vision. *Thinking Skills and Creativity*, 29, 71-86.

<https://doi.org/10.1016/j.tsc.2018.06.006>

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & The PRISMA Group. (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Med*, 6(7).

<https://doi.org/10.1371/journal.pmed.1000097>

Moore, A., & Lynch, H. (2015). Accessibility and usability of playground environments for children under 12: A scoping review. *Scandinavian Journal*

- of Occupational Therapy*, 22(5), 331-344.
<https://doi.org/10.3109/11038128.2015.1049549>
- Moss, P. (2010). We cannot continue as we are: The educator in an education for survival. *Contemporary Issues in Early Childhood* 11(1), 8-19.
<https://doi.org/10.2304/ciec.2010.11.1.8>
- Nah, K., & Lee, S. (2016). Actualizing children's participation in the development of outdoor play areas at an early childhood institution. *Action Research*, 14(3), 335-351. <https://doi.org/10.1177/1476750315621610>
- Norðdahl, K., & Einarsdóttir, J. (2015). Children's views and preferences regarding their outdoor environment. *Journal of Adventure Education and Outdoor Learning*, 15(2), 152-167. <https://doi.org/10.1080/14729679.2014.896746>
- Olsen, H. M. (2015). Planning playgrounds: A framework to create safe and inclusive playgrounds. *Journal of Facility Planning, Design, and Management*, 3(1).
- Özdemir, A. (2019). An approach on children's experiences of participatory planning. *Cities*, 93, 206-214. <https://doi.org/10.1016/j.cities.2019.05.005>
- Paré, G., Trudel, M., Jaana, M., & Kitsiou, S. (2015). Synthesizing information systems knowledge: A typology of literature reviews. *Information & Management*, 52(2), 183-199. <https://doi.org/10.1016/j.im.2014.08.008>
- Pawlowski, C. S., Schmidt, T., Nielsen, J. V., Troelsen, J., & Schipperijn, J. (2019). Will the children use it? A RE-AIM evaluation of a local public open space intervention involving children from a deprived neighbourhood. *Evaluation and Program Planning*, 77, 1-10.
<https://doi.org/10.1016/j.evalprogplan.2019.101706>
- Pearson, R., & Howe, J. (2017). Pupil participation and playground design: Listening and responding to children's views. *Educational Psychology in Practice*, 33(4), 356-370. <https://doi.org/10.1080/02667363.2017.1326375>
- Polyzou, E. A., Tamoutseli, K., & Sechidis, L. (2017). Children's evaluation of a computer-based technology used as a tool to communicate their ideas for the redevelopment of their schoolyard. *City, Culture and Society*, 9, 13-20.
<https://doi.org/10.1016/j.ccs.2017.02.001>
- Punch, S. (2002). Research with children: The same or different from research with adults? *Childhood*, 9(3), 321-341.
<https://doi.org/10.1177/0907568202009003005>
- Rogers, M. (2012). "They are there for you": The importance of neighborhood friends to children's well-being. *Child Indicators Research*, 5, 483-502.
<https://doi.org/10.1007/s12187-012-9146-6>

- Rorabaugh, S. (2019). Flexible futures: Children's agency on the adventure playground. *Cities & Health*, 3(1-2), 111-126.
<https://doi.org/10.1080/23748834.2018.1551174>
- Sandseter, E. B. H. (2009). Affordances for risky play in preschool: The importance of features in the play environment. *Early Childhood Education Journal*, 36(5), 439-446. <https://doi.org/10.1007/s10643-009-0307-2>
- Tai, L., Haque, M. T., McLellan, G. K., & Knight, E. J. (2006). *Designing outdoor environments for children: Landscaping schoolyards, gardens, and playgrounds*. McGraw-Hill.
- UN General Assembly (1989). *Convention on the rights of the child*.
<https://www.ohchr.org/documents/professionalinterest/crc.pdf>
- Wenger, I., Schulze, C., Lundström, U., & Prellwitz, M. (2021). Children's perceptions of playing on inclusive playgrounds: A qualitative study. *Scandinavian Journal of Occupational Therapy*, 28(2), 136-146.
<https://doi.org/10.1080/11038128.2020.1810768>
- Woolley H., Armitage, M., Bishop, J., Curtis, M., & Ginsborg, J. (2006). Going outside together: Good practice with respect to the inclusion of disabled children in primary school playgrounds. *Children's Geographies*, 4(3), 303-318. <https://doi.org/10.1080/14733280601005666>
- Xiao, Y., & Watson, M. (2019). Guidance on conducting a systematic literature review. *Journal of Planning Education and Research*, 39(1), 93-112.
<https://doi.org/10.1177/0739456X17723971>
- Xu, L., & Izadpanahi, P. (2016). Creative architectural design with children: A collaborative design project informed by Rhodes's theory. *International Journal of Design Creativity and Innovation*, 4(3-4), 234-256.
<https://doi.org/10.1080/21650349.2015.1043352>
- Yantzi, N. M., Young, N. L., & Mckeever, P. (2010). The suitability of school playgrounds for physically disabled children. *Children's Geographies*, 8(1), 65-78. <https://doi.org/10.1080/14733281003650984>
- Yates, E., & Oates, R. (2019). Young children's views on play provision in two local parks: A research project by early childhood studies students and staff. *Childhood*, 26(4), 491-508. <https://doi.org/10.1177/0907568219839115>