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THE IMPORTANCE OF AFFORDANCE, DESIGN, AND CULTURAL ANALYSIS METHODS IN ORGANIZING CHILDREN'S PLAYGROUNDS BASED ON NATIONAL IDENTITY

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Abstract

This article analyses the theoretical and methodological foundations of designing children's playgrounds based on national identity. The study applies affordance theory (Gibson, Staempfli, Brussoni), participatory approaches, particularly Clark and Moss's "Mosaic Approach" methodology, and Braun and Clarke's thematic analysis model as an integrated approach. These methodologies enable a deep understanding of children's spatial perception, needs, emotional experience, and cultural-associative views, thereby enriching the design process through empirically grounded insights. The article also examines the representation of national symbols, folkloric imagery, and cultural memory within the play environment and their role in shaping children's cultural identity. The findings show that the combination of an affordance-based functional play environment and culturally spiritual interpretations identified through participatory methods makes it possible to create a comprehensive design model that supports children's development, safety, and cultural identification.

Keywords

Children's playgrounds; affordance; Mosaic Approach; thematic analysis; cultural identity; urban environment; ecological psychology; design methods; play environment.

Introduction. In recent years, children's playgrounds have come to be viewed not only as spaces that support physical activity and social interaction but also as important socio-cultural institutions influencing the formation of children's cultural identity. Due to processes of urbanisation, the expansion of global mass culture, and the widespread adoption of standardised play equipment, the diminishing presence of national identity elements in children's environments is increasingly regarded as a pressing scientific issue in many countries. In Uzbek cities, the majority of playgrounds are built based on standardised European and Chinese

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models, which results in insufficient representation of local folklore and cultural memory elements and may create a gap in children's perception of national identity.

Literature Review. Integrating national cultural heritage, folkloric imagery, and regional identity into the design of modern children's playgrounds has become a global standard, manifesting in various conceptual approaches across different countries. For example, in Finland, the thematic playground system created by Lappset Group since 2015, based on motifs from the national epic *Kalevala*, is recognised as an innovative approach (Figure 1). Over the years, the company has introduced more than 120 playgrounds that not only instil national values in children but also play an important role in enhancing local branding and tourism appeal [1].

Figure 1. Laune Family Park in Lahti, Finland [https://www.lappset.com/en-GB/article/why-construct-a-destination-playground]

In Japan, more than 400 play objects designed on the basis of well-known folk tales such as Momotaro and Kaguya-hime are regarded as a successful model for transmitting cultural codes to children in an adapted and engaging form. According to Tsubota, this approach transforms the play environment into not only a space for physical activity but also a cultural-pedagogical platform for children [2].

In the case of South Korea, play zones integrated with historical monuments hold particular significance. For example, the play space organised around the Hunminjeongeum script monument is based on the principle of introducing the history and identity of Korean writing to children through interactive methods, which Kim and Park describe as a model of "multisensory learning through cultural heritage" [3].

The indigenous-playgrounds practices in Canada and Australia, meanwhile, are viewed as an effective means of creating a community space with distinct

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identity by harmonising Indigenous visual codes, totems, legends, and symbols with contemporary play structures. Frost emphasises that such playgrounds strengthen in children the sense of "territorial belonging" [4] (Figure 2).

Figure 2. A playground integrating Indigenous symbols and totems in Canadian indigenous-playground practice [https://upcparkstest.biggirlonamission.com/twin-feathers/]

In the case of Uzbekistan, although most existing children's playgrounds meet modern structural requirements, their level of cultural identification remains very low. This indicates that due to insufficient integration of national motifs into play spaces, visual environments for children are increasingly dominated by global yet culturally alien images.

Analysis of international experience and local scholarly sources shows that reflecting national identity in playgrounds is relevant not only from an aesthetic perspective but also pedagogically, psychologically, socially, and economically. Therefore, in the context of Uzbekistan, it is necessary to develop methodological approaches for creating thematic cultural playgrounds and to interpret folk tales, ancient symbols, and traditional craft patterns (such as ganch, woodcarving, and ceramics) in innovative forms that comply with safety standards within the play environment.

Theoretical Section. The process of scientifically organising modern children's playgrounds emerges at the intersection of environmental psychology, developmental pedagogy, urban studies, and cultural identity theories. These theoretical approaches emphasise that children's interaction with space occurs directly through affordances, that is, the action possibilities the environment offers

them. Gibson's ecological psychology concept, along with the observational and risky free-play methodologies developed by Staempfli and Brussoni, helps shape an understanding of play spaces not only as constructed objects but also as functional and experience-based environments. At the same time, Clark and Moss's participatory "Mosaic Approach" methodology and Braun and Clarke's thematic analysis model make it possible to examine children's experiences in depth and to empirically analyse the cultural, emotional, and social layers present in their spatial perception. As a result, the integration of these theoretical foundations provides a methodological basis for creating a scientifically grounded play environment that reflects national identity and supports children's movement, play, and creative development.

James J. Gibson (1979) introduced the concept of "affordance" within ecological psychology. An affordance is the action possibility that an object or surface in the environment directly offers to a person. This possibility lies in the relationship between the properties of the object itself and the observer's body dimensions, abilities, and physical capacities. For example, the ground "affords walking," a stone "affords throwing," and a door with a handle "affords pulling." The perception of affordances does not require cognitive inference or prior experience—they are perceived directly and in an immediately recognisable manner [5]. Gibson's theory rejects the traditional information-processing model of cognitive psychology and views perception as inherently intertwined with action. From the perspective of affordance theory, children's playgrounds can be designed as a "landscape of possibilities." The main goal is to provide children with environments that are safe yet appear challenging and offer varied movement opportunities.

Different affordances can be created through variations in height, slope, material, and texture. In such environments, children independently discover the limits of their bodies and develop motor skills, creative thinking, self-confidence, and the ability to assess risk [6, 7].

Gibson's ecological psychology approach is based on the following key principles:

Interdependence of environment and organism – play spaces are evaluated in terms of what they can do for children (their affordances), not what they are in themselves.

Direct perception – children perceive and respond to the possibilities in their environment directly, not indirectly.

Functional approach – every object or space is analysed in terms of its practical possibilities (opportunities for climbing, jumping, hiding, building, and so on).

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Contemporary research on play spaces focuses on the importance of risky and free play in children's development, as well as on gaining a deeper understanding of their interaction with the environment. In this field, two significant methodological approaches proposed by Staempfli (2009) and Brussoni (2015) are also highly important.

Staempfli's methodology of "Observing children during free play."

Staempfli developed a systematic ethnographic observation method to study children's activity levels and creativity as they emerge naturally within play environments [8]. This approach includes the following components:

Observation with spatial awareness – The researcher observes children in their self-selected outdoor environments without interfering.

Movement analysis – Children's actions, postures, expressions, and social interactions during play are recorded.

Analysis of the dialogue between space and movement – The study examines how children "interact" with the environment and how they transform the space through their play.

Review and verification – Observation data are discussed with children, parents, and educators.

Brussoni's methodology for researching "risky free play."

Brussoni and her team applied a comprehensive methodological approach to examine the significance of risky free play in children's development [9]:

Multi-method approach:

– Qualitative methods: in-depth interviews with children, parents, and specialists;

– Quantitative methods: surveys and statistical analyses;

– Ethnographic observations: long-term naturalistic observations.

Reconceptualisation of risk – The study reinterprets the concept of "risk" not as a negative factor but as an essential component of development.

Diversification of research sites – Play environments in different geographic, climatic, and cultural conditions (urban, rural, tropical regions) were studied.

Child participation – The methodology ensured that children could directly express their own experiences during the research process.

These three approaches were comparatively analysed in the following table (Table 1).

Table 1. Key characteristics of the methodologies of Gibson, Staempfli, and Brussoni.

Characteristic	**Gibson (1979) – Affordance Theory**	**Staempfli (2009)**	**Brussoni et al. (2015)**
Theoretical basis	Ecological psychology, direct perception	Developmental psychology,	Health sciences, risk analysis

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		physical activity	
Methodological focus	Functional possibilities of the environment	Observing the dialogue between movement and space	Multi-method approach, reconceptualising risk
Object of study	Organisation of the environment and its affordances	Children's natural play movements	The role of risky play in development
Role of the child	An active agent interacting with the environment	The subject of observed movement	A narrator of experiences and manager of risk
Temporal perspective	Continuous dynamic interaction	Observations within a specific time interval	Long-term developmental process
Key concept	"Affordance" (action possibilities)	"Movement–space dialogue"	"Risky free play"
Practical outcome	Designing spaces based on functional affordances	Recommendations for increasing play activity	Risk management policy

Gibson's affordance theory is integrated into contemporary play research in the following ways:

- A foundation for spatial analysis – Staempfli and Brussoni use affordance analysis to understand why certain environments are appealing to children.

- Reconceptualising risk – In Brussoni's research, "risky" affordances are viewed as developmental opportunities for children.

- Enriching observation methods – Staempfli's observations document how affordances are enacted during play.

- Deepening child participation – Children directly identify and describe the affordances that are meaningful to them.

In recent decades, children's spatial perception, their everyday experiences, and their participation in urban environments have become central themes in pedagogy, urban studies, environmental psychology, and design research. Architect-designed spaces, particularly playgrounds and learning environments, often fail to fully reflect children's needs, emotional responses, or cultural perception. For this reason, contemporary research increasingly calls for involving children not merely as objects of observation but as active participants and knowledge-producing subjects within the research process.

One such innovative approach is the "Mosaic Approach" methodology developed by A. Clark and P. Moss. First introduced in 2001 and later refined in a comprehensive monographic publication in 2011 [10], this methodology is grounded in strong participatory principles and enables young children to express

their understanding of space, their experiences, and their needs through various multimodal tools. The metaphor of the "mosaic" refers to how pieces of data gathered through different methods are reassembled into a single, coherent understanding. This allows the researcher to gain a clearer insight into the complex, multilayered, and individual nature of children's experiences.

The "Mosaic Approach" methodology proposed by Clark and Moss is a multi-method, participatory, and visual-ethnographic approach designed to explore young children's experiences, needs, and spatial understandings. Inspired by the principles of Loris Malaguzzi and the Reggio Emilia pedagogy, the methodology places children at the centre as active subjects of the research. The name "Mosaic" signifies that the data obtained through different methods are interpreted as complementary "pieces of a mosaic."

The methodology is based on the following principles:

– Multi-source data collection — parallel methods such as drawing, photo-tracking, mapping, conversations, mini-interviews, route observations, storytelling, and modelling provide deep insights into children's perceptions.

– Children's agency — the method gives children the right to use various tools to express their ideas, ensuring that their spatial feelings and preferences are not distorted by adult interpretation [11].

– Data triangulation — information obtained through different methods is compared, producing a unified conceptual image — the "mosaic."

– Reflexive cycle — the findings are revisited together with children, a process that guides both the researcher and participants toward new insights.

– Inclusivity — visual and sensorimotor methods provide equal opportunities for children with low literacy, limited language skills, or special needs.

The "Mosaic Approach" is widely used in environmental psychology, urban studies, early childhood education, children's ergonomics, safe playground design, and child-centred design methodologies. The scientific significance of Clark and Moss's method lies in its ability to base design and policy decisions not on an adult-constructed "image of children's needs," but on authentic data derived from children's own lived experiences.

Another notable example of such research is the thematic analysis methodology developed by British scholars Braun and Clarke, which is one of the core or "fundamental" approaches in qualitative research aimed at identifying meaningful patterns and recurring themes within data, systematically grouping them, and providing conceptual interpretation. The authors describe thematic analysis as a flexible method that is not rigidly tied to a specific theory and can be adapted to various epistemological paradigms [12]. The methodology consists of

six stages: familiarisation with the data, generating initial codes, constructing themes from the codes, reviewing the themes, defining and naming the themes, and producing the final scholarly text. As Braun and Clarke emphasise, thematic analysis has significant scientific value not only as a tool for revealing structural patterns in content but also as an interpretative means for gaining a deep understanding of human experience, cultural context, and social processes.

Conclusion. A comparative analysis of contemporary play research within the context of Gibson's affordance theory yields several important conclusions:

All three approaches view play as an active interaction between the child and the environment. Gibson's concept of "affordance" provides the theoretical foundation for Staempfli's "movement dialogue" and Brussoni's concept of "risky free play." Together, they show that the significance of play environments lies not only in their physical properties but in their functional possibilities.

In modern research, Gibson's ecological perspective is integrated with applied methodologies. Staempfli's observational methods document how affordances are enacted in practice, while the multi-method approach of Brussoni's team examines the role of affordances in child development within a broader context.

Affordance theory offers a key principle for designing play environments — spaces must provide children with a wide range of opportunities for movement and varied experiences. This approach helps achieve a balance between safety and developmental challenge.

The integration of research indicates that future studies on play environments should consider the following:

– Cultural and individual differences in affordance perception;

– The interaction between digital and physical affordances;

– Universal affordance design for children with diverse abilities;

– Preservation and creation of natural affordances within urban environments.

Taken together, these research findings offer architects and designers several practical directions: effective play environments should offer children affordances with varying levels of complexity. During the design process, professionals must aim to create environments that support children's natural exploratory tendencies without restricting their curiosity and discovery.

In conclusion, Gibson's affordance theory serves as a crucial theoretical and methodological foundation for contemporary play research, helping to explain the complex ways children interact with their environment. The synthesis of these approaches proposes a holistic methodological direction for creating rich, supportive, and stimulating play environments that enhance child development.

When applied to playground design, Clark and Moss's "Mosaic Approach" and Braun and Clarke's thematic analysis place children's subjective experiences, needs, and cultural identity at the centre of the design process, resulting in a more participatory, empirical, and evidence-based methodology. Through the Mosaic Approach, multimodal data capture how children perceive space, which objects evoke joy, safety, or discomfort, and how their associative links with folklore, national imagery, and story characters shape their interaction with the environment. Thematic analysis then enables systematic coding and identification of themes within these multilayered data, forming the basis for functional, aesthetic, cultural, and psychological design solutions. As a result, playground designs not only meet ergonomic and safety standards but also become scientifically grounded environments that support children's cultural memory, national identity formation, and socio-emotional development.

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