

ISSN 2541-0598 (Print)

ISSN 2541-1217 (Online)

ARTEKS

JURNAL TEKNIK ARSITEKTUR

Publication Media of Architecture Research

DECEMBER 2020

ARTEKS

JURNAL TEKNIK ARSITEKTUR

VOLUME 5, ISSUE 3, DECEMBER 2020



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PUBLICATION INFORMATION

ARTEKS : Jurnal Teknik Arsitektur [p-ISSN: 2541-0598; e-ISSN: 2541-1217].

Short journal title: **ARTEKS J. Tek. Arsit.**

For year 2020, 3 issues [Volume 5, Issue 1 (April), Issue 2 (August), and Issue 3 (December)] are scheduled for publication with 6-15 articles per issue. Commencement of publication: December 2016.

ARTEKS : Jurnal Teknik Arsitektur, initialized as ARTEKS, is published freely open access of fulltext PDF articles via journal website [<https://journal.unwira.ac.id/index.php/ARTEKS/index>]. The ARTEKS : Jurnal Teknik Arsitektur is published by the Widya Mandira Catholic University's Faculty of Engineering Architecture Study Program jointly with Indonesia Architect Association of [IAI] NTT Region, Indonesian Assisted Environment Research Association [IPBLI] and Indonesia Writers Guild [SATUPENA RI].

ARTEKS : Jurnal Teknik Arsitektur has been indexed and abstracted by: SINTA Grade 2 [Science and Technology Index], DOAJ [Directory of Open Access Journals], GARUDA [Garba Rujukan Digital], ICI [Index Copernicus International], Dimension – Digital Science, BASE [Bielefeld University Library], IOS [Indonesian One Search], and other reputable indexers.



[10.30822/arteks.v5i3](https://doi.org/10.30822/arteks.v5i3)

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Accreditation : Sinta 2 based on SK 85/M/KPT/2020

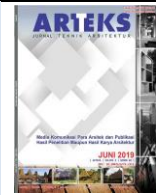




Contents available at: www.repository.unwira.ac.id

ARTEKS
JURNAL TEKNIK ARSITEKTUR

<https://journal.unwira.ac.id/index.php/ARTEKS>



Volume 5 Issue 3 December 2020

doi: 10.30822/arteks.v5i3

INDEXING AND ABSTRACTING

ARTEKS : Jurnal Teknik [p-ISSN: 2541-0598; e-ISSN: 2541-1217] has been covered [indexed and abstracted] by following indexing services:

1. SINTA Grade 2 [Science and Technology Index]
2. DOAJ [Directory of Open Access Journals]
3. ICI [Index Copernicus International]
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TABLE OF CONTENTS

Editorial

Architecture as a relation of doing and being [Reginaldo Christophori Lake] [329 – 330]

Article – Research

Modern architecture in Indonesia: A genealogy study
[Johannes Adiyanto] [331 – 338]

The hedonistic sustainability concept in the works of Bjarke Ingels [Nita Dwi Estika, Yudhistira Kusuma, Dewi Retno Prameswari, Iwan Sudradjat] [339 – 346]

The use of minimal surface principles and multiplex joinery system for designing post-disaster construction systems [Stephanus Evert Indrawan, Gervasius Herry Purwoko, Tri Noviyanto P. Utomo] [347 – 358]

The role of space in sustaining children's traditional games
[Dhini Dewiyanti Tantarto, Dianna Astrid Hertoery] [359 – 372]

The relationship between traditional activities and the mass-space pattern in *Bali Aga* Customary Village society – Tenganan Pegringsingan [Lydia Dewi Setiawan, Purnama Salura, Bachtiar Fauzy] [373 – 390]

The implementation of traditional Balinese architecture in the art theater of Badung Regency [Alan Darma Saputra, Rahadhian Prajudi Herwindo, Yohanes Karyadi Kusliansjah] [391 – 400]

The effect of vertical gardens on temperature and CO₂ levels in urban housing
[Agung Murti Nugroho] [401 – 408]

Flexible architecture of the '*popsyandu*': An appropriate adaptable solution for urban kampung land - use issue [Dalhar Susanto, Widyarko, Nisrina Dewi Salsabila] [409 – 420]

The utilization of paving blocks as environmental heat reduction materials [Mohammad Imran, Novita Shamin, Rahmi Budi As'Adiyah] [421 – 430]

Phenotype and genotype Malay traditional house in West Kalimantan [Indah Kartika Sari, Wiendu Nuryanti, Ikaputra] [431 – 440]

Indoor health and comfort for the green workplace at university [Dyah Kusuma Wardhani, Susan, Michelle Anastasia, Michele Julian Setiando] [441 – 448]

Mitigating building collapse in Nigeria [Williams Barnabas Qurix, Rahila Gugule Doshu] [449 – 458]

Physical form sustainability of *Huta Siallagan* Samosir architecture in supporting Toba Caldera Geopark Cultural Tourism [Rumiati Rosaline Tobing, Andi Kumala Sakti, Hanny] [459 – 468]

Sustainable architecture: The lessons from *ume kbubu*, the traditional house of Fatumnasi Community [Apridus Kefas Lapenangga, Donatus Ara Kian, Benediktus Boli] [469 – 478]

The role and meaning of fireplace in Karangtengah Hamlet Settlement, Banjarnegara: A study of the spatial pattern of *pawon* and kinship [Yohanes Basuki Dwisusanto, Hermawan] [479 – 488]

The role of space in sustaining children's traditional games

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ARTICLE INFO	ABSTRACT
<p><i>Article history:</i> Received May 12, 2020 Received in revised form May 30, 2020 Accepted July 27, 2020 Available online December 01, 2020</p> <hr/> <p><i>Keywords:</i> Space character Space of children's Space requirements The role of space Traditional games</p> <hr/> <p>*Corresponding author: Dhini Dewiyanti Tantarto Architecture Engineering Study Program, Faculty of Engineering and Computer Science, Universitas Komputer Indonesia Email: dhini.dewiyanti@email.unikom.ac.id ORCID: https://orcid.org/0000-0002-8993-7929</p>	<p><i>Playing is one of the activities naturally possessed by children from childhood and elements of learning have been observed to be in playing and vice versa. For example, traditional games have philosophical values with moral messages but they have been replaced by games prioritizing technological advancements over time. This has reduced the familiarity of many children with traditional games in recent times. Meanwhile, the reduction in the quantity and quality of play and public open space for children is often considered one of the factors causing the extinction of traditional games. The availability of an adequate environment including play areas or playground aids children's development. This paper discusses the traditional games known by the present generation and the role of space in sustaining them with the focus on West Java. The study was conducted through observation and distribution of questionnaires to children aged 6-12 years living in Bandung city and some urban settlements. The results provided an overview of the types of traditional games known by the children, the space they favored, and its role in their willingness to play.</i></p>

Introduction

Childhood is an important period in a child's development due to the participation in several play activities (Piaget and Cook 1952; Piaget 2013a; 2013b). This means it is not possible to separate children and play (Burke 2005). It has also been discovered there are elements of learning in these activities and play is also sometimes spontaneously inserted in the learning process with a variety of creativity to ease boredom (Gallahue and Cleland-Donnelly 2007; Lafferty 2005). The activities help children

achieve gradual and complete development physically, intellectually, socially, morally, and emotionally (Goodway, Ozmun, and Gallahue 2019; Barnett 1990; Hughes 2009).

The traditional game is owned by almost all people in different parts of the world with different names often given to similar games. They are mostly hereditary and transferred from previous generations with their inherent cultural and philosophical values (Shinta, Syamsi, and Haryanto 2019). Through playing, children are taught to foster the value of competitiveness, the spirit of togetherness, help, tolerance,



sportsmanship, the spirit of building, as well as the love of nature and living things (Solnit 1998; Kuczyński 1984; Klein 1929; Chudacoff 2008). Subsequently, the games also train motor skills due to the presence of elements of motion, running, jumping, crouching, tiptoeing, kneeling. It teaches counting, frugality, and strategy and develops children's creativity, especially during the process of selecting appropriate playing materials such as stones/gravel, banana fronds, leaves, trees, and others. The games have a high value of flexibility due to the possibility of engaging in them individually or in groups, indoor or open space. There, several positive values are obtained from these traditional games.

Children basically need a positive environment in the form of play space to facilitate positive activities to aid their development (Dewiyanti 2011). This is associated with the ability of a good space for play to affect the quality of play as well as their psychological and motor development (Senda 1992; Senda et al. 1998).

The less participation in traditional games in recent times has, therefore, been linked to the reduction in playgrounds, urban public spaces, and natural physical environment due to the development and the rapid advancement in technology. Moreover, the recent generation of children prefers technology-based games such as androids, gadgets, and play stations which can be played personally, anytime, and anywhere without the need for any special space.

The purpose of this research is to explore the in-depth knowledge of the recent generation of children about traditional games, the kinds they play, and the architectural role of space in ensuring their continuity. It is, therefore, important to conduct this study in order to preserve traditional games with positive values and also to determine the role of architecture in providing good space for its sustenance and participation of children. Similar research was conducted by Gelisli and Yazici (2015) with the focus on children's traditional games in the Konya region and Turkey (Gelisli and Yazici 2015). Roscoe (2018) also researched 2000 parents in the United Kingdom and almost 100% reported the importance of traditional games recognition and introduction due to their several benefits in the development of a child's personality (Roscoe 2018). They were also found to be suitable for the development of a child's age.

This study was conducted by observing several children aged 6-12 years living in Bandung city and some urban settlements. This age group was selected due to their ability to communicate and express opinions both orally and written (Papalia, Olds, and Feldman 2005). The analysis showed the types of traditional games they recognize, types of games they play, and the spaces they love when playing games. The results are expected to be useful as a basis for major research in mapping the traditional games for Indonesian children in the sustainability concept.

Method

The study started through the distribution of questionnaires to children aged 6-12 years, living in Bandung, and urban or planned settlements around the Antapani as well as urban villages or unplanned settlements located in the Lingga Wastu area directly bordering the Cikapundung River. The study areas were observed to have the same conditions including a school, a fairly large river, varieties of environmental nuances between the artificial environment, and trees with each of them recording 50 children going to school. These areas were considered based on the elementary school age range, the strong influence of environment on children's development, and the increasing desire to explore and seek adventure (Waite, Rogers, and Evans 2013; Dewiyanti 2011; Owens 1992). Outdoor spaces in the form of parks or shared spaces, rivers, suitable environmental roads, and free yards considered to be healthy were found in the selected locations. Meanwhile, a natural environment, garden, or shared space is believed to have the power to attract children to play games and ultimately interact with each other.

The research questions provided include (1) what kind of traditional games do children know? and (2) Do children still play such traditional games and where? These questions were asked to determine the character of the games and the kind of space that stimulates them or vice versa.

The next question was "does space trigger certain types of games or is there no relationship between them?" It is important to confirm this in order to confirm or refute the assumption that the reduction in outside urban space reduces play areas for children. According to Wonoseputro

(2007), the non-involvement of children in the arrangement of urban public space areas makes them lose their proper playground and this usually leads to the development of invisible playgrounds (Wonoseputro 2007; Liem and Lake 2018).

The children found to be engaging in the traditional games were interviewed and asked to show the location being referred. Some were also invited to express their preferred space for playing activities and the information retrieved from these verbal/oral expressions were analyzed using content analysis methods to determine, group, and interpret the frequently used important words (Franzosi 2004).

Result and discussion

Classification of traditional games in West Java

Some traditional games in West Java are classified based on the space used either inside or outside, social interaction either individual or group, tools, and gender groups as shown in table 1.

Table 1. Traditional game groups

The name of the game	Space		Social interact		Tools		Gender	
	1	2	3	4	5	6	7	8
<i>Bebentengan</i>		√		√		√	√	
<i>Congklak (mancala games)</i>	√			√	√			√
<i>Egrang (stilts)</i>		√	√		√		√	
<i>Gangsing/gasing</i>	√	√	√	√	√		√	
<i>Gatrik</i>		√		√	√		√	
<i>Gobag sodor</i>		√		√		√	√	√
<i>Kelereng (marbles)</i>		√		√	√		√	
<i>Ketapel (catapult)</i>		√	√		√		√	
<i>Engkle (hopscotch)</i>		√		√		√		√
<i>Petak umpet/ucing sumput (hide and seek)</i>	√	√		√		√	√	√
<i>Oray-orayan</i>		√		√		√	√	√
<i>Endog-endogan</i>		√		√		√	√	√

The name of the game	Space		Social interact		Tools		Gender	
	1	2	3	4	5	6	7	8
<i>High jump rubber game</i>	√	√		√	√			√
<i>Sapintrong rubber band</i>	√			√	√			√
<i>Alung sarung</i>		√	√		√		√	
<i>Galah bandung</i>		√		√		√	√	√
<i>Hahayaman</i>		√		√		√	√	√
<i>Beklen (knucklebones)</i>	√			√	√			√

Note:
1: Indoor
2: Outdoor
3: Individual
4: Group
5: Need a tool
6: Does not need a tool
7: Commonly played by male
8: Commonly played by female

Three categories of these games were identified and they include those (1) still known and played by the children with the meaning understood; (2) played by children without knowing it is a traditional game; and (3) totally unknown by the children as shown in figures 1 and figure 2.

Figure 1 shows the games in planned settlements while figure 2 indicates those in unplanned ones. The term planned settlements used in this paper include the areas spatially arranged based on the theoretical rules applied by both government and private developers. They already have complete and standard facilities such as schools, playgrounds, public spaces, and roads.

Meanwhile, unplanned settlements are naturally developed areas based on the needs of the settlers without any reference to the theoretical rules of the existing spatial order (Purbadi, Djunaedi, and Sudaryono 2019; Refranisa 2019; Mahagarmitha 2018; Bawole 2020). They are usually characterized by dense settlements and inhabited by middle to lower-income people for generations. Furthermore, spatial planning is usually an agreement made among the residents (Kustianingrum 2010). This, however, does not mean unplanned settlements always grow into slum areas.

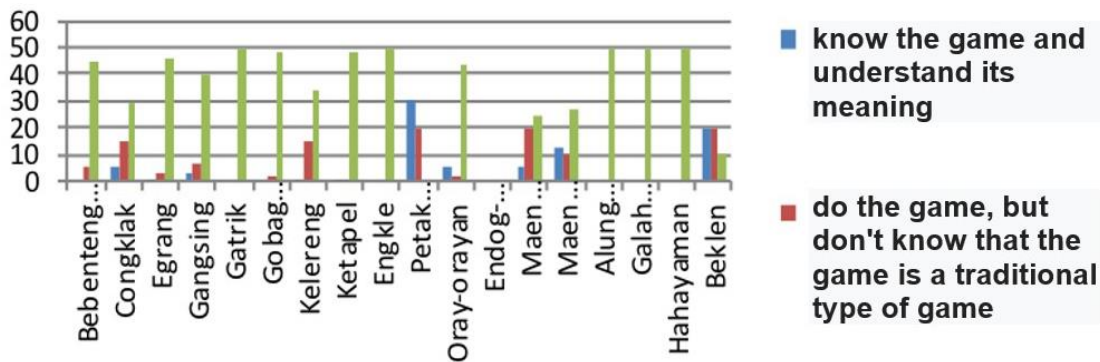


Figure 1. Games in planned settlement areas

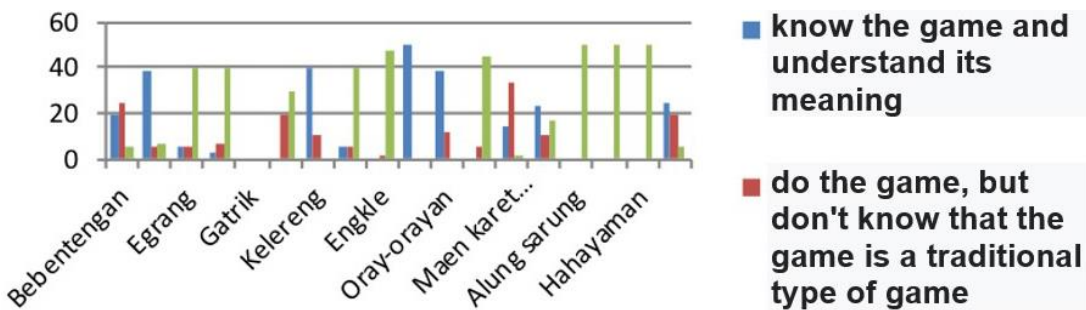


Figure 2. Games in unplanned settlement areas

Several traditional games from West Java are unknown and almost disappearing such as *pérépét jengkol*, *sorodot gaplok*, *paciwit-ciwit lutung*, *ningnang*, *ucing kuriling*, *tokecang*, *pepeletokan*, *encrak*, *sermén*, *sutén*, *salalimpetan*, *pélak cau*, *ole-ole ogong*, *meuncit reungit*, *jajangkungan*, *ngajajar tilu/jarlu*, *gugunungan*, *ayang – ayang gung*, *maén bandring* and *maén panggah*, *bolu bogem*, *ambil-ambilan*, *ucing pengpeun*, *cingcangkeling*, *gegelebusan*, *ucing pegat*, *galah bandung*, *galah burulu*, and others.

Most of these unknown games are generally a combination of Sundanese sound art, for example, *ole-ole ogong* which is a children's game usually played in the rice harvest season. It involves the children walking hand in hand along the edge of the paddy field, blowing trumpets made from dry straw, and singing “*olé-olé ogong, melak cabe di tarogong, dihakanku embe ompong, diteang kari sapotong*”. Meanwhile, the *pérépét jengkol* game requires the cooperation of several people as shown in figure 3. It gives the children joy when they accompany their parents at the village in welcoming the rice harvest season.



Figure 3. *Pérépét jengkol*
 Source: (Sunarya 2013)

The traditional games known by the children and their favorite space

From the many types of traditional games found in the study area, apparently, only a few are still being played with some generally observed to be conducted in certain spaces. The observations and interviews with the children showed they prefer open space, both planned and spontaneous, to closed space as shown in table 2. The spontaneity is attached to the fact that children play reflexively, especially when walking with their friends, for example, from school to their



Figure 5. Characteristics of children's school yards

According to Bland (2012), children's drawings are actually an imagination of their wishes and the images shown indicate the children expect a school environment with several building elements and apparently without luxury material (Bland 2012). The green aspects of the drawings in the also mean they crave a beautiful school to support their playing activities.

Broda (2007) showed there is no ideal standard for children's playgrounds because they have their instincts in choosing where to play (Broda 2007). However, it is better if adults are able to provide diverse landscape features, for example, through gentle contours, vegetation as well as soft and hard play materials on the land to stimulate them.

Rogers (1976) examined the influence of the school's spatial organization in shaping children's behavior and its effects on their creativity and emotional level (Rogers 1976). Francis (1988) also showed the importance of accepting children's aspirations and negotiating with parents when planning a playing environment or a school environment to ensure it accommodates children's positive play needs (Francis 1988). Broda (2007), however, concluded that the schoolyard is the best play facility for a child's development, therefore,

it is important for parents to choose a school with a well-planned yard facility as well as maintain a balance between academic and play needs (Broda 2007).

Road as a magnet for children

The road was found in both planned and unplanned settlements to have a special attraction for children to play. This is associated with the fact they attend school in the environment and this allows them to play on the road while going to school and coming back home. This usually happens spontaneously.

Karsten and Van Vliet (2006) and Tranter and Doyle (1996) showed urban children are indeed accustomed to "reconciling" with motorized vehicles to play on residential streets or alleys (Karsten and Van Vliet 2006; Tranter and Doyle 1996). Even though it is dangerous, road space is able to provide creativity that stimulates the desire to play. Figure 6, however, shows the danger with the spontaneous playing activities of children on the road.



Figure 6. Playing on a dangerous road

There is a need for agreements between settlement managers, residents, and parents to implement positive playing activities on the road. An example of this shown in figure 7 with the schools and community discovered to be teaching and introducing the children to traditional games by playing on the road. The play zone can, however, be provided by the parents or the children themselves as shown in the following pictures.



Figure 7. Playing traditional games on the road
Source: (Riyadi 2020)

In unplanned settlements, children were observed to be playing on the road while begging and this is associated with the fact that the area is inhabited by people with non-permanent income. Therefore, the children help their parents by begging or selling on the street and also playing in the process.

The role of adults in introducing traditional games

It is impossible for children to know traditional games without the intervention of adults at home and at school. Therefore, these games can only be sustained through the participation of both the children and their parents. According to Ginsburg (2007), adult involvement has the ability to strengthen

emotional bonds between children and parents as well as their teachers (Ginsburg 2007). Another research has shown that playing together, teaching, or just watching children play makes them feel the love of parents and create a sense of security in them (Yudiwinata 2014).

Roopnarine (2011) also showed it is important for parents to introduce several cultures to their children starting from childhood to help them develop tolerance, insight, and empathy to enrich their cognitive aspects (Roopnarine 2011). These cultures certainly include traditional games which are not only to teach the children how to play but also the philosophy of the game. Figure 8, however, shows the teacher's involvement in participating and introducing traditional games to children.



Figure 8. Traditional game with adult guides

Tools and playing time

The tools for traditional games are very easy such that children have the ability to produce themselves or buy in stores selling the equipment. These games are better compared to modern ones based on the togetherness and cooperation established among the children and this further makes the tools cheaper and easy to obtain (Kurniati 2016; Nur 2013). Figure 9, therefore, shows some of the play media and tools that can be bought or made by the children.



Figure 9. Traditioanl game tools
 Source: (Silaen 2017)



The observations and interviews with the children in the study areas showed the material used, method of obtaining play material, and the preferred time of playing as shown in table 3. Generally, it is easy for children to make and produce tools or playing materials because they are provided by nature. Some of these include stones/gravel, trees/vegetation, banana fronds, shells or tree seeds, twisted rubber, bamboo, grapefruit skin, and others. Moreover, the search for these materials stimulates children's creativity and aid their cognition.

These games are generally played during school holidays and certain celebratory moments such as Scout Day, Independence Day, Kartini day, and several others. They are usually designed by the school and this shows the importance of school in ensuring their survival and preservation.

Table 3. Material, method, and time

Game	Material	How to get material	Time
<i>Congklak (mancala games)</i>	Plastic, wood, remaining shells, seeds obtained from the road or garden, gravel	Shop, pick up from the beach, pick up on the street	During holidays or celebratory moments
<i>Egrang (stilts)</i>	Wood, bamboo	Made by parents or adults, self-made	During holidays or celebratory moments
<i>Gangsing</i>	Plastic, wood	Buy	During the holidays
<i>Kelereng (marbles)</i>	Glass marbles	Buy	When vacation, after school
<i>Petak umpet/ucing sumput (hide and seek)</i>	Trees, walls, benches, tables, cabinets, rooms, large buckets, beds, and so on	What is available in the environment	When on vacation, after school, when together with friends
<i>High jump rubber game</i>	Rubber, plastic	Buy, self-made.	During holidays or celebratory moments
<i>Rubber sapintrong game</i>	Rubber, plastic	Buy, self-made	During holidays or celebratory moments
<i>Beklen (knucklebones)</i>	Plastic balls, golf balls, rubber balls, knucklebones, shells	Buy	During the holidays

***Petak umpet/ucing sumput* as a sustainable game**

The information obtained from the children showed *petak umpet/ucing sumput* or hide and seek is the most well-known game up to date even in various parts of the world (Barritt et al. 1944). According to Peskin and Ardino (2003), this game is able to train children to keep secrets and practice patience (Peskin and Ardino 2003). Moreover, children learn the game first from their mothers, doubling as their first teacher, especially when they are being taught about the space in the house.

The game is popular because it is (1) cheap, (2) easy, (3) can be conducted anytime and anywhere, and available, (4) for all ages, genders, groups, and even races throughout the world. It has the ability to establish communication without the use of spoken words and this makes it sustainable. The game also requires the children to think fast in exploring the spaces available in the environment to hide as shown in figure 10. Sometimes the element of togetherness and teasing colleagues in charge of searching becomes more dominant when children run out of ideas in finding space.



Figure 10. Playing hide and seek (*Petak umpet*) with friends

The space with the ability to stimulate traditional game activities

It is important to preserve traditional games due to the several positive benefits it presents to the children's growth as shown in figure 11.

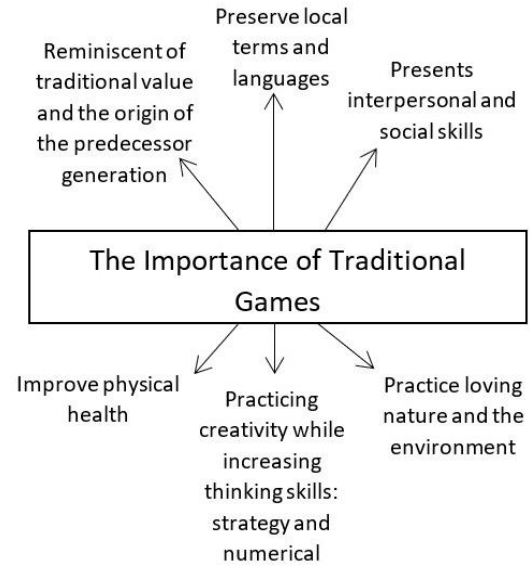


Figure 11. The importance of traditional games

A space for play is required to implement these traditional game activities but the quality of public open spaces in urban areas has been discovered not to fulfill the criteria required to stimulate the children. This is because they are more dominated by city parks filled with ornamental plants with insufficient free space for movement, jumping, squatting, and rolling for both individuals and groups.

Children are more stimulated to engage in traditional game activities by free space for movement both indoors and outdoors planned based on design rules or due to spontaneous actions. It is, however, possible to equip the spaces with natural and artificial features to aid the children's activities. These include a composition of hard or hardscape and soft or softscape materials with the assurance they have the ability to ensure safety and comfort, considering the fact that children are very careless and tend to ignore safety factors. This type of space is further explained in the following figure 12.

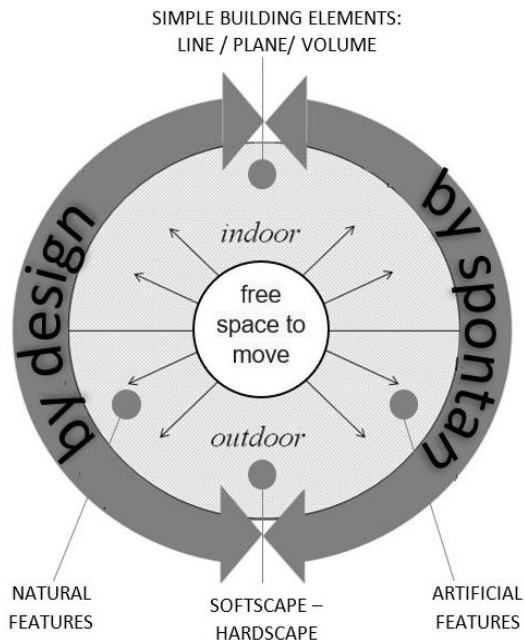


Figure 12. Space with the ability to simulate traditional games

This is in line with Senda's (1998) general classification of children's play environment into 6 spatial categories including (1) natural with several elements such as trees and rivers; (2) open space; (3) road; (4) anarchy or unplanned space appearing according to the child's imagination, and usually in the form of "tough" games such as chasing and fighting; (5) secret hiding rooms with the spaces known only to certain groups of children; and (6) planned space for play. Meanwhile, parents are required to first facilitate a traditional space for play (Senda et al. 1998).

Space for play as a trigger for traditional games

Certain spaces were found to have the ability to trigger children's desire to play traditional games and this is usually strengthened by the presence of an "opponent player" or a friend at an appropriate time or moment. Therefore, the spaces with the suitable game based on their features include:

1. Open space with natural and artificial features: hide and seek games.
2. Open spaces and aisles with flat floors: marbles and jumping rope.
3. Space in the form of a hallway: knucklebones, congklak, and jump rope.
4. Open spaces, especially with soft stretches: stilts.

Conclusion

Several conclusions were obtained from the data analysis and some of the traditional games observed to be relevant in the studied are *congklak* (mancala games), stilts (*egrang*), trim (*gangsing*), marbles, *petak umpet/ucing sumput* (hide and seek), high rubber jump (high jump using rubber bands), *sapintrong* rubber band, and knucklebones. These games are usually played with peers during school holidays and certain celebratory times. However, some of those not known by the children include *pérépét jengkol*, *sorodot gaplok*, *paciwit-ciwit lutung*, *ningnang*, *ucing kuriling*, *tokecang*, *pepeletokan*, *enracak*, *sermén*, *sutén*, *sasalimpetan*, *pélak cau*, *ole-ole ogong*, *meuncit reungit*, *jajangkungan*, *ngajajar tilu/jarlu*, *gugunungan*, *ayang - ayang gung*, *maén bandring* and *maén panggal*, *bolu bogem*, *ambil-ambilan*, *ucing pengpeun*, *cingcangkeling*, *gegelebusan*, *ucing pegat*, *galah bandung*, *galah burulu*, and others. They were discovered not to be known by the children because they are not introduced to them and they generally require dance moves and sound art.

Some other games are being played by children with the help of those concerned with the existence of traditional games. In this case, the teachers, parents, and the community are very influential in ensuring the sustenance of the games. It was also discovered that they are mostly played in structured spaces such as schools or thematic villages deliberately built to educate children or introduce them to the natural life of the village. Moreover, the sustainability of the games is supported by the modification of toy materials and play systems.

Open spaces, roads, and spaces intended for children to play also have a significant role and this means they need to be highly prioritized by the planners. Meanwhile, these spaces and playgrounds would be meaningless without the parents, teachers, and observers introducing the games. This, therefore, places the space in the second layer after the knowledge and experience of parents are transmitted to children as indicated in figure 13. The transmission makes them understand the traditional game philosophy and a positive play experience thereby stimulating their desire to play in the space.

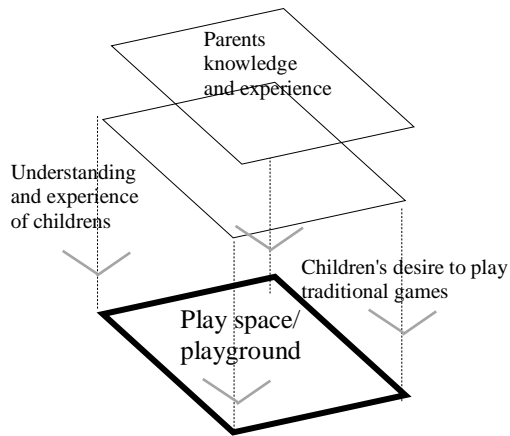


Figure 13. The role of space as the second layer

This research showed the traditional games not recognized and played by the children and the sustenance of these games is expected to be a matter of concern for all due to its noble value in building positive child character.

Acknowledgment

The author sincerely appreciates the 5th-grade students of Antapani and Linggawastu elementary schools for being the resource persons for this article.

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