The Techniques of Participatory Design for Inclusive Public Space Provision in Kampung Kota of Surakarta

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Abstract. The technique of participatory design is essential for the future development knowledge of architecture to inform the improvement of architectural education and practice in Asia. Therefore to provide of inclusive public spaces for the community, this research article presents a field study of the usage of community participation design method in design and planning to provide inclusive public spaces within the kampung (settlements) in Surakarta, Indonesia. Surakarta has a problem to provide inclusive public space for its dense organic-informal *kampung*'s for the vulnerable populations such as children. Multi dimensional complexities of the *kampung*'s often challenge the notion of public space provision. Community participation approach arises as one of the preferred alternative methods to solve the problems with its basic community-based foundation. This research chose Sangkrah and Gandekan sub-districts as research locations both of the areas represent *kampung*'s characteristics and inhabited by many children population. Steps toward the goal of the study are; (1) field observation of the implementation of a community participation design through participatory place making project, and (2) examining typology assessment perspective, and (3) clarify participation techniques. This research used: (1) descriptive analysis for the project implementation, and (2) qualitative analysis for examining community's perspectives. Through this multi-perspective analysis, this research presents the an alternative framework for implementing techniques community participation methods in design and planning to provide inclusive public spaces especially for children in Indonesia and other developing countries.

Keywords: Community Participation Methods in Design, Inclusive Public Space, *Kampung* Kota

Introduction

In 1996, UNICEF established the Child Friendly Cities initiatives as the embodiment from The 1989 Convention on the Rights of the Child that was synthesized systematically from 1924 Children Rights' Declaration (UNICEF, 2009). Indonesia adopted child-friendly concept into central-government policy since 2006 and equipped with jurisdictional standing in 2009. Six institutional indicators of child-friendly city were formulated and categorized into five clusters; (1) civil rights and freedom, (2) family and alternative care, (3) basic health and wellbeing, (4) education, leisure, and cultural activities, and (5) special protection (Indonesian Ministry for Women and Child Protection, 2010). Surakarta is one of the cities in Indonesia that had adopted the child-friendly concept in 2013 and had been declared as Indonesian' best practice ever since (Antara, 2017).

Along with this issue, UNICEF (1989) stated at UN Convention on the Rights of the child that playing is a children's right. This is because playing is beneficial for children's growth, as it allows children to use their

creativity while developing imagination, agility, and physical, cognitive, and emotional strength (Ginsburg, 2007; Burton, 2011). This is also adjacent with Indonesian's child friendly city's education, leisure, and cultural activities indicator. The provision of the amenities that support this right has become a necessity. Public spaces that help to support this activity is critical (Committee on Environmental Health, 2009; Vargas, 2015). Surakarta at this context has also put an effort towards the issue by starting to build *Taman Cerdas* ("Smart Park") citywide that adopted the child-friendly concept (Surakarta Development Planning Agency, 2017). In 2014, there were 6 *Taman Cerdas* (public park) and gains into 10 parks citywide in 2017 (Utami, 2014; Surakarta Development Planning Agency, 2017). But the efforts arrive into the question about the provision of public space in slum settlement and dense *kampungs* that spread across the city, as Surakarta is still entangled with slum problems (Astuti, 2014; Surakarta Department of Public Works, 2015).

In 2014, 10% of Surakarta's urban area is categorized as slum settlements (Surakarta's Mayor Decree, 2014). The slum settlements spread across five districts and

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covers up to 465 Hectares of land. The main concentration of slum settlements in Surakarta are located alongside the Kali Pepe riverbanks. *Kampung Sangkrah* and *Gandekan* are two of Surakarta's prominent slum area. These *kampungs* are characterized as densely populated area, with high building-density and lack of adequate infrastructures. Therefore, there are lacks of space left for a new public space. Besides, the child-friendly parks built by the municipality are built on the district-level in which they're not reachable by all of the children everyday comfortably and safely (Putri, et. al, 2014). This then results in children using street and narrow vacant space to play.

The Kampung Layak Anak Project with The Participatory Approach Design

Departing from concerns over the lack of adequate public spaces that supports children activities within slum settlements (*kampung*) in Surakarta and the tendency of continuous top-down approach in child's supporting infrastructure provision, Urban-Rural Design and Conservation (URDC) Laboratory at Department Architecture, Faculty Engineering, Universitas Sebelas Maret of Surakarta initiated a project called "*Kampung Layak Anak*" (child-inclusive *kampung*). This project aims to gather and visualize data about the existing public spaces that the children use within the dense *kampungs* in Surakarta that could turn into a tool to persuade government's interventions towards the issues. Along the process, the main activity has been extending to not only gathering data from the children, but also implementing design collaboration for making a public space provision through community participation methods in design and planning, included in this method is place-making method.

The Research's Aims

Since the project in both *Kampung Sangkrah* and *Kampung Gandekan* had finished, it is important to evaluate the **techniques** of design collaboration to outline lessons from the implementation of the project. The design collaboration in this research is being observed and evaluated from the (1) ladder of participation, (2) typology assessment perspectives, and (3) participation techniques. Steps towards the goal would be preceded by describing the process and the actors involved in the project extensively.

Methods

This research could be categorized as an evaluation research that aims to evaluate *Kampung Layak Anak* project from the participation level perspectives. Neuman (2013) described evaluation research as an applied research in which one tries to determine how well a program or policy is working or reaching its goals and objectives. The quantitative data gathered for this research is collected through continuous field observations during the implementation process of the

project that includes observation in each stage or activities of the project. This research used descriptive method within its analysis. There are three analysis conducted;

1. Participatory Ladder Analysis

This analysis is respectively based on the work of Arnstein (1969) that since has been adopted into youth and children context by Hart (1992; 1997; 2013) extensively. This works becomes the baseline to understand in which level children participate in both mapping and designing process.

2. Designer-Children Typology Analysis

The second analysis is based on the work of Lee (2007; 2008) that had been developed from the philosophy of Lefebvre (1972). This analysis is intended to understand the relationship of designer and the community (children) within the process of design implementation of *Kampung Layak Anak* project and the result (product) of each stages of the process.

3. Participatory Techniques Analysis

The third analysis is based on the theory of participatory techniques developed by Sanoff (2000). This analysis is intended to understand techniques / methods used in each stage of the process and how the results it created differs from each of the project.

The Context of Kampung Layak Anak, Place -Making Project Profile

Kampung Layak Anak Stage Process

Supported by a collaboration with *Kampung Kota* (Urban *Kampung*) 2017 class at the Department of Architecture, Universitas Sebelas Maret, this project was enabled to deployed 14 students to do collaborative design with children. The students were from the class of *Kampung Kota* as the facilitators in this project. The facilitators will be responsible in assisting in managed focus group discussion, data collection and analysis data. *Kampung* (sub-district) Sangkrah and Gandekan are selected based on its slum characteristics (See Figure 1). The process spans for five months, from March to June 2017 that took place in one neighborhood (*Rukun Warga- RW*) in each *kampung*; *Kampung Sangkrah* (RW 13 – RT 03) and *Kampung Gandekan* (RW 6 – RT 2).

The processes of community participation design divide in to four stages in both *kampungs* as case studies (See Figure 2). **Stage I** is mapping and focus group discussion (FGD). Facilitators with children are doing participatory mapping existing public space location and condition. Facilitators were identified perception and collecting aspirations about public space in both *kampungs*. This process was set up an information of existing condition and collected the perception and aspirations of children about public space. **Stage II** is the process of Design Collaboration. In this process the students and children were verifying the potential spot for public space through place making methods activities. This process is picturing inspiration, ideas, and creativity

through the children's sketch. **Stage III** is technical collaboration (design action). In this process the facilitators were translating the idea from children's sketch in to applicable design.

Fig. 1. Study Area of Child Inclusive Kampung.

Design action for building inclusive public space for children in both *kampungs*. **Stage IV** is the monitoring process. The aim is to evaluate and monitoring the design action of inclusive public space in both *kampungs*.

During the implementation, there are several actors from different background (stakeholders type) involved in the project, and the configuration varies between both *kampungs* and in each stage of the program. This is caused by the difference of children participant's profile; *Kampung Sangkrah* gathered children through elementary school, while *Kampung Gandekan* gathered through existing child-based local community (*Taman Pendidikan Al-Quran*). Therefore, school authority appears only in *Kampung Sangkrah* and takes a role to provide permission for the project. Local community appears in *Kampung Gandekan* with a role to help gathering children for the project. Government representatives appears in both *kampung* as they also provide permits and help monitoring the implementation. Children are involved in focus group discussions and design collaborations as the main participants, but their ideas are being counted as a base for technical collaboration. Architecture student in this projects poses for two different roles; as facilitators in Stage I and Stage II, and as designers in Stage III. At the Stage III, they collaborated with local artists and handy-man.

Fig. 2. Study Area of Child Inclusive *Kampung*

The Place Making Method

The place making method is one of the community participation methods in design. This project departs from understanding the fact that both of the sites are characterized as slum settlement, vacant spaces to build a new public spaces are not available. Therefore, this project takes **place-making** approach in public space provision. The place-making movement is soared over the concerns of several issues, one of them is lack of public space especially in informal settlements that increase tension and stress among people who live in crowded and inadequate conditions (PPS UN Habitat, 2012). Scheekloth and Sibley (1995) defined place-making as "the way in which all of us as human beings transform the places in which we live". Place-making offers cross-cutting perspective on activities which are often categorized as either formal or informal (Lombard, 2014).

At the context of children and young people, Sibley (1995; 1996) explains that place-making for children could be seen as an act to fight for a right, as the life-worlds of young people are bounded by rules created by adults, marking boundaries (re)establishing and naturalizing a moral division between adults and children.

Fig. 3. Activity of Place Making Project at Stage In *Sangkrah* and *Gandekan*.

This project highly relied on the Project Public Spaces (PPS)'s practices endorsed by The UN Habitat. The consideration to use this method is that it relies on the place-led, community-based process that will raise sociability values of the children (PPS UN Habitat, 2012). Therefore, this project was started by a place-making workshop, in collaboration with RUJAK Center for Urban Studies. It was equipped with an in-site simulation to conduct place-making method for children. (see Figure 3). Photography method was chosen to map the existing children's public space to ease children imagining their places. During the process of photography-based place-making ARKOM Jogja assist URDC Team by providing facilitators to lead the activity. The facilitators were also asked children several information related to the existing public spaces that include; the accessibility, the frequency of utilization, perceptions, and aspirations of the existing public spaces. This information was then aggregated into quantitative data listed below.

Result and Discussion

Actors Involved in *Kampung Layak Anak* Place Making Project

There are various actors / stakeholders involved in *Kampung Layak Anak* project. They also hold different roles that support the implementation of the project. This framework of where of implementation in both *Kampung Sangkrah* and *Kampung Gandekan* depart are part of research will explain the actors, their roles, and relationship with each other to put into context. The In *Kampung Sangkrah*, the activities were focused on the SD Negeri Sawahan 2 (elementary school) located within the *kampung*. This was caused by the utilization of its playground space as the most frequently used public space in the *kampung*. There are several stakeholders involved, URDC UNS acted as the expert academician supported with architecture student volunteer. They play a key role as the main initiator and facilitator during the process. From the Non-Governmental Organization, there are (1) Bernard Van

Leer Foundation as the main financial supporter for the whole *Kampung Layak Anak* project, (2) RUJAK Center for Urban Studies as financial supporter and knowledge-building collaborator, (3) ARKOM Jogja as a partner to train architecture student-volunteer to be a facilitator, and (4) Local Artists Community as a technical-support partner in design implementation process. From the government, (1) the authority of SDN Sawahan 2 supported the project by giving a permission to conduct activities in the school with its students (children participants) and ensuring the sustainability of the implemented public space and (2) BAPPEDA (Development Planning Agency) supported the project by giving permission and initial data as the project's objectives are in line with Surakarta's child-friendly objectives. From the local community, the only actor involved is the school student (4th grade) who also live in the *kampung* where the school is located.

Differs from the *Kampung Sangkrah*, *Kampung Gandekan*'s implementation did not go through school authorities to gather children, it chose existing children local community instead. Similar to *Kampung Sangkrah*, URDC UNS acted as the expert academician; the main initiator and facilitator during the process. Bernard Van Leer Foundation, RUJAK Center for Urban Studies, and ARKOM Jogja, Local Artist Community, has also the same role. From the governmental side, it has the same support from BAPPEDA (Development Planning Agency of Surakarta). From the local community, the project was supported by (1) *Ketua RT* (administrative local leader) by granted permission to conduct activities in *Kampung Gandekan*, (2) *Taman Pendidikan Al-Quran*, a children local community that teaches Islamic religious teachings, that helped facilitator to gather children, (3) PKK, a local women community, to also granted permission to conduct activities, and (4) children as participants of this project.

The differences caused by different actors involved in both *kampungs* affects the process of project implementation. In *Kampung Sangkrah*, school authority played important role in advising and permitting the project implementation. As the result, the "mandatory" feeling could be felt during the process as data gathering and design collaboration process were held in the classroom. Limited time also offered during the process. By contrast, *Kampung Gandekan* relies the In this case,

it offers more flexible time and less-mandatory feeling as children would be also able to do the activities outside.

Fig. 4. Diverse Actors Involved in The *Kampung Layak Anak* Project.

Designers (facilitators) also have more free space to communicate with the children. As the results, more creative ideas from the children could be gathered in Kampung Gandekan compared to Kampung Sangkrah.

The Level of Children Participation in Kampung Layak Anak Place-Making Project

This part of analysis is intended to show the level of children participation in *Kampung Layak Anak* place-making project. The importance is that the project had already putting itself with the notion of child participation as its main value as well as its tagline. Therefore, to evaluate it becomes necessary. Hart (1992; 1997; 2013) in his extensive researches had adopted Arnstein's (1969) participation-ladder theory into children and young people context. In this research, his theory becomes the baseline to evaluate children participation in each stage of the projects, because the level of participation may vary.

There are three stages of the project, similarly implemented in both *Kampung Sangkrah* and *Kampung Gandekan* (See Figure 5 below). The first stage is the series of focus group discussions in which children were gathered to map public spaces utilization within their *kampungs* and to gather their aspirations towards better public space. The participation of children in the first stage is categorized into the sixth (6) rung "adult initiated but shared decisions with children". The reason is that the designers, in this case Urban Rural-Design and Conservation Laboratory and the architecture students who volunteer initiated the activity. But the activity included children and treated them and their voices as priority, thus the decisions is on the children's hand.

The second stage is the design collaboration process, in which children were asked to picture the public space they want to have in their *kampungs*. In this stage, the children draw the public space, that include elements and amenities of it, into the paper given by the architecture students that took a role as facilitators. The participation of children in this second stage is categorized into the sixth (6) rung of the ladder; "adult initiated but shared decisions with children". The reason is similar with the previous stage, because the adults initiated this activity and the children became the participants. But still, the main aim of this stage is to collect ideas and the needs of the children. Therefore, the children hold the decisions.

Both first and the second stage are categorized into sixth rung of the ladder due to the situation at the beginning of the project that the community and the children themselves in both *kampung* are not fully aware of the public space inadequateness issue. Therefore, to manage participation into the highest level (initiated by children) is not possible. In those phases, the initiative and initial information comes from the facilitators. As the result, the whole activities were dependent to the facilitators, children were continuously needed to be invited to those activities. Information about the adequate versus non-adequate is being "infiltrated" by the facilitators, in this case with strong academic background. Nevertheless, the children's knowledge still could be the baseline for developing the design. The benefit to be situated in this level is that the knowledge-exchange could occurs between the facilitators and the children. A lesson learned from these phases is that pre-project socialization activities could help children initiated initiatives on their own by triggering awareness to understand the issues that they faced earlier, so that the project could be in the highest participatory level possible.

Fig. 5. The Ladder Children Participation in The *Kampung Layak Anak* Project.

The last stage is the design implementation process, in which the architecture students took a role as designer, translate children's ideas from the previous stage and realize them into a real public space. There are two activities within this stage, the first one is the design translation where the designers discuss and translate children's pictures into real and applicable design and the second one is the design realization with additional technical collaboration with local artist and construction workers (handy-man). This stage falls into the fifth (5) rung of the ladder; "consulted and informed". In this stage, children are not intended to collaborate in hands-on experience of building the public spaces but their opinions and ideas are treated seriously, even becomes the initial ideas of the design. During the activities, the designers do not close the chance of accidental involvement of children who live near the construction site. As a result, during the realization there are several children watching the process, even lending small help of watering plantation of the public space, even though they are not intended to participate. Nevertheless, this stage is not classified as true participation. Therefore, better method to conduct design implementation with children included is needed to be outline in order to improve this process to become a true participation.

Participation Techniques Analysis

Participation Techniques in Data Gathering Process (Stage I)

The first participatory stage of the project in general was "public space mapping" to collect data about existing public space, that was equipped with focus group discussion to verify the results (see figure 1). Nevertheless, even that the framework of activity was the same, the method to conduct is different. At *Kampung Sangkrah* implementation, the method used to gather information was **only** the focus group discussion that was led by architecture student volunteer as facilitators. At the context its typology, it falls into *group*

interaction method where the facilitators led the discussion of relevant public space issues. The facilitators asked series of questions (See Table 1) and the children answered the questions in public-voting manner, then the facilitators recapped all of the information gathered during the process and put them into aggregated data.

Table 1. Questions Asked During Data Gathering Process.

No.	Question Asked	Sub-Questions
1.	Profiling	Age
		Gender
		Address
2.	The Location of Public Spaces They Frequently Use	-
3.	The Reason They Choose The Current Public Space	-
4.	Characteristic of Utilization	Time Spent
		Time Preferences
		Type of Users
		Frequency of Utilization
		Type of Activity
5.	Perceptions of Children Towards The Existing Public Space (Scale)	Comfortability
		Safety
		Accessibility
		Cleanliness
		Friendliness
6.	Aspirations	-

By contrast, the implementation at *Kampung Gandekan* chose different method to conduct the mapping (data-gathering) stage. Influenced by the previous workshop held by URDC UNS in collaboration with RUJAK Center for Urban Studies, the *Gandekan* team chose mainly place-making photography-based **transect walk**, equipped with individual questionnaire to gather information. The facilitators (1) gathered 30 children who lived in the *kampung*, (2) divided them into 10 small-groups consisted of three children that each were accompanied by a mentor (architecture student), (3) equipped each small-groups with a pocket/cell-phone camera, and (4) accompanied children wandering their environmental surroundings to show existing public spaces that they frequently use. At the end of the process, the facilitators asked each children with an

online questionnaire the same questions asked in *Sangkrah* (see Table 2). Therefore, this method is a mix between “*awareness methods*” in which the facilitators initiated walking tour to facilitate children’s awareness of their environment—especially the public spaces, and “*indirect methods*” as in the end of the process the facilitators used questionnaire to gather more information.

Table 2. Result of Frequency of Utilization, Time Preference, Scale of Accessibility (Perception), and Time Spent.

The results from both *kampung* are different to some degrees, as the methods used in each *kampung* was different (see Figure 7).

current conditions of public spaces from the perspective of children, only the methods are different. The data was also used to select the most frequent-used public space for the next stage—design collaboration. But different additional yet important information of the exact locations of public space and the pictures of each public space taken by children are be able to gathered through *Kampung Gandekan’s* method. In *Sangkrah*, they only plotted the location of public space through spoken information from children, but not the visualized ones. In this case, children tended to echo other children’s voices

in mapping the public space. By contrast, the children in Kampung Gandekan that used transect walk method dominantly utilize their sense of place and individual

Fig. 7. Map of Public Space Location Produced Through Transect Walk and FGD.

The same aggregated information gathered are the same, as they used the same questions to identify the

memory to spot the public spaces they use. From this stage, this research finds that the transect walk method is more effective to gather comprehensive initial data for design participation with children.

Participation Techniques in Design Collaboration Process (Stage II)

The general framework for the second stage for both *kampungs* was the same, it was design collaboration focus group discussion (FGD); in which children were asked to outline their design ideas into selected public spaces that were selected from the previous stage. In both *Kampung Sangkrah* and *Kampung Gandekan*, the facilitators (1) gathered the same children-participants from the previous stage, (2) handed them a piece of blank paper and marker/pen, and (3) asked them directly to draw the public space they want that include the design (“how the public space will look like?”) and its element (“what amenities and additional decorations (murals, etc.) do you want to have?”). Therefore, the method falls into “brainstorming method” close to its *gallery* type, as it facilitates wild idea generations with no criticism by giving out media (paper) for the children participant to use. Result of The “Gallery” Technique Conducted During The Design Collaboration Phase (See Figure 8).

Fig. 8. Result of gallery type in *Kampung Gandekan*.

Fig. 9. Result of gallery type in *Kampung Gandekan*.

Nevertheless, the results produced from the focus group discussion in each *kampungs* are different. From the result, it could be identified that the drawings of public space that the children aspired were more precisely pictured in *Kampung Gandekan*, compared to *Kampung Sangkrah* (see the comparison on figure 8). The pictures produced in *Kampung Gandekan* appear to be more applicable and mimics the real condition of the existing public space in their *kampungs*. Some of the children were also careful enough to put detailed amenities with specific use that they want into the drawings. By contrast, the drawings produced in *Kampung Sangkrah* were less detailed and applicable. Some of them even had difficulties to picture the public space that they want, and prefer to write down their aspirations instead. Some of the children that were successful to picture the idea were only focused on the

additional elements of the public space such as the picture of murals (See figure 9). This finding indicate that the different previous method taken in public space mapping affect the children’s ability to visualize their aspiration. Children in *Kampung Gandekan* were previously equipped with real vision of their existing condition of public spaces, as *Kampung Sangkrah* could only imagining the place they use.

Participation Techniques in Technical Collaboration Process (Stage III)

Technical collaboration in this stage is in both *kampungs* intended to be implemented without direct participation from children. Therefore, in this stage the facilitators firstly (1) collected children design ideas, (2) conducted discussion with fellow facilitators and the academic experts (URDC UNS), (3) translated children’s idea into applicable scaled design for each public spaces selected (see figure x), and (4) collaborated with local artist community and handy-man for implementation.

Local artists collaborated in creating murals for public spaces, while handy-men helped the physical development process.

Conclusion

This study has examined the technique of participatory design for inclusive public space provision in *Kampung Kota* of Surakarta. The importance of this study to encourage better technique community participation in the future. Based on the results of these analyses several issues have been clarified:

1. There are **two important key player** engaged in *Kampung Layak Anak* Place-Making project. They are **stakeholders** (collaboration of multi-sectoral stakeholders such as academician, NGO’s or others facilitator (visual artisan, handy man), and

government. The **local community actor** represents by the head of students, teachers of SDN Sawahan at *Kelurahan Sangkrah*. Meanwhile in the local community represent by the chief leader and local children community in *Kelurahan Gandekan*. Facilitators hold the main role in project implementation. A lesson learnt from this analysis is that involving non-formal local community as intermediate partner to involve children is better than formal organization such as school for flexible time-span and communication with the children.

2. *Kampung Layak Anak* place-making project has involved multi-level children participation. The level of children participation in Stage I and Stage II were categorized into the sixth (6) rung of the ladder; “adult initiated but shared decisions with children”. In the last Stage III categorized in fifth (5) rung of the ladder; “consulted and informed”. Therefore, in the further projects the children participation should be encouraged in the upper level in eight (8) rung of the ladder; “child initiated, shared decision with adults” by initiating series of pre-project socialization to raise children’s awareness of issues they faced related to their environmental surroundings. This step would trigger children’s own initiatives to intervene such issues, thus maximizing their participation level.
3. It is necessary to use various participation techniques in design collaboration process. Transect walk is more effective for data gathering process, as this method enables children using their sense of place and memory to map public spaces. This method will result in better design proposals created by the children as they would save memory of the existing condition of the public spaces they want to improve. There is also an importance to develop a new participation technique that would be able to include children in technical collaboration.

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