

Development of the Bustanul Athfal Aisyiyah Pijeran II Ponorogo Play Environment in Improving Cognitive Development and Creativity in Childhood

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ABSTRACT

Bustanul Athfal (BA) Aisyiyah Pijeran II is located in Pijeran Village, Siman District, Ponorogo Regency. What used to be community land has now been converted into a learning place for early childhood with the approval of the local community. Apart from being a place to study, this place is also useful as a children's play area with fun games. Games are a tool that must be present in the early childhood education environment. Good rides will have a positive impact on children. This community service program aims to develop a play environment so that children can train emotionally, build creativity, hone thinking skills and foster children's sense of courage. Activity methods in community service include field surveys, selecting designs and making technical drawings, calculating material requirements and designing prototypes. The results of this prototype design produce a swing design that is equipped with a safety system, so that children can play comfortably and without worrying about falling. Apart from that, the addition of play rides in the form of swings on empty land can be beneficial for children so they are interested and feel at home in the play environment for a long time. Properly assembling and installing the position of the swing play ride can create a play ride that is safe and fun for children.

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INTRODUCTION

In this increasingly advanced and modern era, school is a very important need for children's education. Education is an important aspect that children must pursue from an early age. Early childhood is a productive age for children to begin to learn about education. One of the places used to implement education from an early age is preschool (child education from an early age). Early childhood education can literally be interpreted as education given to children aged 0 to 6 years (Khaironi, 2017; Saputra, 2018). Early childhood children have a spontaneous attitude when carrying out activities and when interacting with other people or their peers. The interactions that are created can usually come from the playing environment.

A play environment is a place that is used to accommodate/carry out activities such as sports and play in early childhood. For them, playing is something fun that can be used for socializing, tolerance, cooperation, placing oneself, learning many things, developing language skills, developing creativity and releasing negative emotions in children (Budiwaluyo & Muhid, 2021; Fakhriyani, 2016; Panjaitan & Herawati, 2023; Rohmah, 2016). By playing, children get something new, including learning Indonesian culture and getting to know their environment (Fadlillah, 2019; Purwana & Yanurtuti, 2020).

Bustanul Athfal (BA) Aisyiyah Pijeran II is a PAUD, which is a school destination for parents to send their children to school in the Pijeran village environment and its surroundings at an affordable cost. Bustanul Athfal (BA) Aisyiyah Pijeran II is located in Pijeran Village, Siman District, Ponorogo Regency, which was previously community land which has now been converted into a learning place for early childhood with the approval of the local community. The change in location aims to develop education for early childhood so that children can learn well. Apart from being a place to learn, this place is also useful as a children's play area with fun games.

Games are a tool that must be present in the early childhood education environment. Good rides will have a positive impact on children. So far, many early childhood play rides have been developed but only pay attention to the safety aspect and have not paid attention to the usability aspect. An example of a game vehicle that pays attention to the usability aspect is a swing. Therefore, this community service aims to create a play ride in the form of a swing using renewable materials. Through this vehicle, it is hoped that children can practice balance, train their emotions, build creativity, hone their thinking skills, and develop their sense of courage.

METHODS

(This community service is carried out at Bustanul Athfal (BA) Aisyiyah Pijeran II, which is located in Pijeran Village, Siman District, Ponorogo Regency, East Java Province. This partner's location is 4.8 km and can be reached around 11 minutes from the Muhammadiyah University Ponorogo campus. Bustanul Athfal (BA) Aisyiyah Pijeran II is one of the places for community service activities organized by the Muhammadiyah University of Ponorogo, where lecturers and students collaborate with teachers and the surrounding community. The service location is strategic, so it can be easily reached by vehicles, both cars and motorbikes. The service location map can be seen in Figure 1 below.

Prototype making for this community service was carried out in the Mechanical Engineering Laboratory at Muhammadiyah University of Ponorogo. A work technique with four processes was applied to make work easier and more efficient. This process consists of forming sketch images, designing 3D/2D images, forming models, and making prototypes, which can be seen in Figure 2. The planning and design process carried out in developing this playground can be seen in the flow diagram which can be seen in Figure 3.

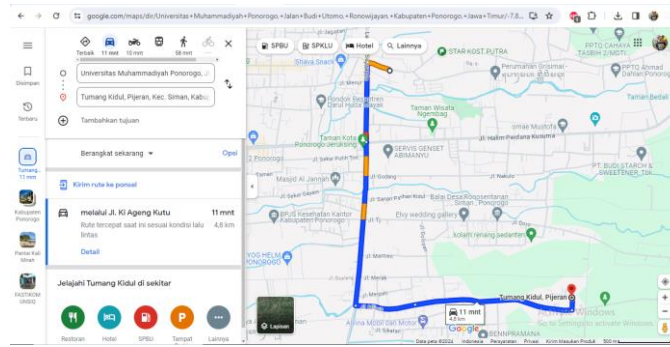


FIGURE 1. Location of community service.

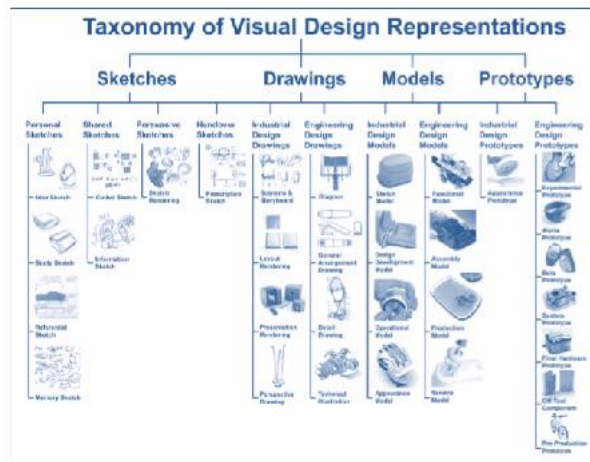


FIGURE 2. Taxonomy of Visual Design Representations (Pei et al., 2016).

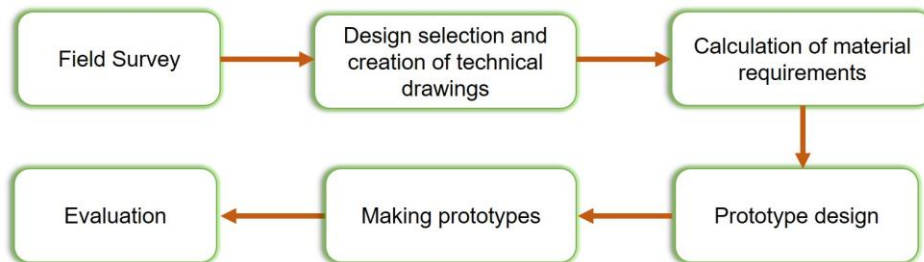


FIGURE 3. Flowchart of playground development

The process of designing a swing design is done by looking for swing design references from various appropriate sources and then varying them into a more efficient form. Designs that are suitable and have received approval from teachers and the local community are then sketched, and a complete 2D and 3D drawing process is carried out, along with measurements, using Solidwork software. Images that have been modeled using Solidwork software are then reviewed again to determine the size that will be used. The size of the image that needs to be revised is then justified according to ISO standards by the community service team. The size of the image that has gone through the assessment stage can be illustrated in Figure 4.

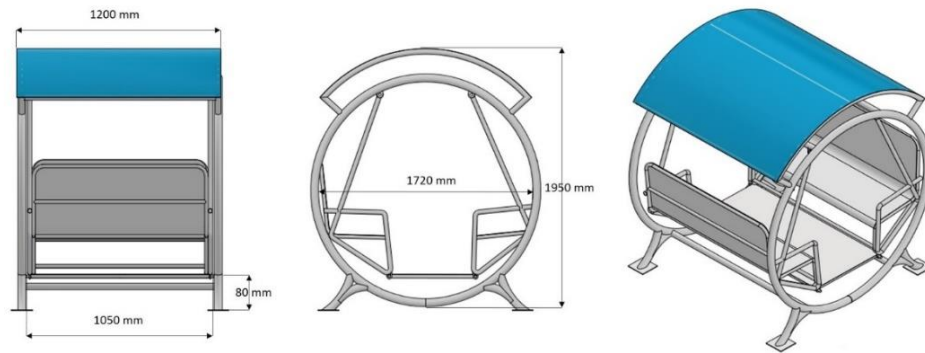


FIGURE 4. Image dimensions after modeling.

The design process, which has gone through the sketching, drawing and modeling stages, is then continued with the prototyping process. The manufacture of the swing prototype was carried out using welding techniques with weld forms that complied with ISO standards. The welding used for making the prototype is SMAW (shielding metal arc welding). The prototype that has been made is shown in Figure 5.



FIGURE 5. Process of making a swing prototype.

RESULTS AND DISCUSSION

The swing prototype assembly process is made by combining several galvanized pipes and hollow iron into one using the welding method so that it can form a swing, which can be seen in Figure 6. This assembly process combines knowledge, expertise, and technology to produce high-quality products (Triyono et al., 2023). The swing is equipped with a safety system, so children can play comfortably and safely without worrying about falling. The working mechanism of this swing is that it is pushed by someone to create a force that produces back-and-forth movement (Aisiyah et al., 2022; Niati & Listiaji, 2022). At the highest point of the swing, potential energy is at its peak, while kinetic energy is zero. At that moment, the direction of movement changes, and the swing begins to move in the opposite direction. At the lowest point of the swing motion, kinetic energy reaches its peak, and potential energy becomes zero. When it returns to its lowest position, the direction of movement changes again, and the cycle of back-and-forth movement (Chusni, 2017).



FIGURE 6. Swing prototype.

The service team made a prototype of this swing according to the needs of the play environment at Bustanul Athfal (BA) Aisyiyah Pijeran II, which they felt was still lacking. At Bustanul Athfal (BA) Aisyiyah Pijeran II, there is still a lot of empty land, as can be seen in Figure 7. This land can still be used again to add play areas that can be useful for children so they are interested and feel at home for a long time in the play environment. According to (Hijriati, 2017) the way to make children feel at home in the play environment for a long time is to make the game rides more interesting.



FIGURE 7. Bustanul Athfal (BA) Aisyiyah Pijeran II playing environment.

A play environment is a place that must be present in Bustanul Athfal (BA) because this environment is a play place for children to spend time with their peers. In the play environment, there are several rides, including rotating bowls, slides, seesaws, and swings. Figure 8 shows a swing ride that has been positioned in one place and has been assembled correctly. Proper assembly and installation can create a safe and fun ride for children. Apart from that, rides that are properly assembled and installed can also build self-knowledge, social skills, improve linguistic intelligence and analyze the surrounding environment through the experiences gained while playing (Maharani Ratna et al., 2024; Umi Hani & Hibana, 2022).



FIGURE 8. Swing rides at Bustanul Athfal (BA) Aisyiyah Pijeran II.

CONCLUSION

Based on the results of the service, it can be concluded that the development of the play environment was carried out by adding play facilities in the form of swings. The swing assembly process is carried out by combining knowledge, expertise and technology to produce high quality products. This swing is equipped with a safety system so that children can play comfortably and safely without worrying about falling. Assembling and positioning a play swing correctly can create a safe and enjoyable play area for children. In addition, properly placed rides can also build self-knowledge, social skills, improve linguistic intelligence and analyze the surrounding environment through the experience gained during play.

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