

THE DEVELOPMENT OF APE TUSANTA TO IMPROVE CHILDREN'S MOTOR SKILLS AT RA MUSLIMAT NU ROWOLAKU PEKALONGAN REGENCY

Ella Fadilah Nur Fahmi¹, Fitra Faradila², Dimas Setiaji Prabowo³, Firdaus Perdana⁴, A Tabi'in⁵

*Universitas Islam Negeri K.H. Abdurrahman Wahid Pekalongan
fitra.faradila24014@mhs.uingusdur.ac.id*

ABSTRAK

Pendidikan anak usia dini merupakan suatu bentuk pengajaran yang ditujukan untuk anak dengan rentang usia 0-6 tahun melalui pemberian rangsangan berupa pendidikan guna mendukung proses tumbuh kembang anak. Pemberian rangsangan yang tidak tepat dapat memicu pada keterlambatan aspek perkembangan anak. Diperlukan adanya inovasi pengembangan media pembelajaran seperti APE yang dapat menunjang aspek perkembangan anak salah satunya aspek motorik anak. Tujuan penelitian ini yaitu untuk mendeskripsikan proses pengembangan dan menguji kelayakan APE TUSANTA untuk meningkatkan motorik anak di RA Muslimat NU Rowolaku, Kabupaten Pekalongan. Metode penelitian yang digunakan adalah jenis penelitian dan pengembangan atau Research and Development (R&D) dengan model pengembangan Sugiyono yang juga mengembangkan langkah-langkah penelitian pengembangan milik Borg and Gall yang terdiri atas sepuluh tahap. Dari sepuluh tahap pengembangan tersebut, peneliti hanya terbatas dalam menggunakan enam tahap saja dikarenakan keterbatasan biaya dan waktu. Adapun teknik pengumpulan data yang diterapkan, yaitu melalui observasi awal, wawancara dengan guru kelas, angket atau kuesioner, skala, dan dokumentasi. Sedangkan teknik analisis data yang digunakan, yaitu deskriptif kualitatif dan kuantitatif. Hasil analisis dan pembahasan penelitian dapat disimpulkan berdasarkan tahap uji coba produk yang memperoleh hasil bahwa media APE TUSANTA mampu meningkatkan motorik kasar dan halus anak melalui proses uji coba terbatas dan uji coba luas di lapangan dengan masing-masing uji memperoleh peningkatan presentase sebanyak 5%. Kemudian hasil akhir validitas media pembelajaran APE TUSANTA dinyatakan sangat valid atau layak digunakan.

Kata kunci : Pengembangan APE TUSANTA, Motorik Anak

ABSTRACT

Early childhood education is a form of instruction designed for children aged 0–6 years, involving educational stimulation to support their growth and development. Inappropriate stimulation can lead to developmental delays in children. There is a need for innovative learning materials, such as APE, that can support various aspects of child development, including motor skills. The objective of this study is to describe the development process and test the feasibility of the APE

TUSANTA in enhancing children's motor skills at RA Muslimat NU Rowolaku, Pekalongan Regency. The research method employed is a research and development (R&D) study using Sugiyono's development model, which incorporates the ten-stage research and development steps developed by Borg and Gall. Of these ten development stages, the researcher was limited to using only six due to constraints in budget and time. The data collection techniques applied included initial observation, interviews with classroom teachers, questionnaires, scales, and documentation. The data analysis techniques used were qualitative and quantitative descriptive methods. The results of the analysis and discussion of the research can be summarized based on the product testing stage, which found that the APE TUSANTA media is capable of improving children's gross and fine motor skills through the testing process.

Keywords: *APE TUSANTA media, motor skills*

INTRODUCTION

Essentially, early childhood refers to the age range of 0–6 years, a period marked by rapid growth and development. This phase is irreplaceable and cannot be repeated in the future, which is why it is often referred to as the “golden age.” This golden age occurs only once in a person's lifetime, and thus exerts a significant influence on subsequent stages of a child's growth and development. Therefore, appropriate guidance and stimulation are necessary to optimize the child's growth and development process. This aligns with the findings of Ariani et al. (2022), who state that quality stimulation is essential for fostering healthy child development. Such stimulation can be provided through early childhood education, which delivers learning experiences to children through play-based, enjoyable educational activities.

Early childhood education institutions are essentially a space for self-exploration as well as a place to stimulate all aspects of a child's development, providing a fun learning environment where learning is integrated into various play-based activities. Similarly, according to Law No. 20 of 2003, Article 1, Paragraph 14, as explained in Devrizal et al., (2019): Early Childhood Education is a form of instruction intended for children aged 0–6 years through the provision of educational stimuli to support the child's growth and development process in preparing them to participate in the next stage of education. Therefore, the form of stimulation for children must be appropriate to their developmental level. This

allows for the observation and monitoring of whether the child's developmental aspects have progressed well or not. A child's developmental aspects are divided into six categories, one of which is motor development.

According to Hurlock, as cited in Ariani et al., (2022), motor skills are a developmental process for controlling the body driven by neural activity and the development of muscles associated with the nervous system. Meanwhile, according to Zukifli and Samsudin in Devrizal et al., (2019), motor skills are related to various human body movements and are determined by three elements: muscles, nerves, and the brain. In contrast, according to the views of Wiliam and Monsama in Khadijah (2022), motor skills are movements performed using either small or large muscle groups. Therefore, based on the views of the experts mentioned above, it can be concluded that motor development is an individual's development in controlling their body movements to perform actions influenced by the nervous system, the brain, and both small and large muscles. The primary function of motor development concerns a child's ability and skills in coordinating the movements of their body parts.

Basically, motor skills in children are divided into two categories: gross motor skills and fine motor skills. Gross motor skills involve body movements based on activities that use large muscle groups, such as the leg muscles for running and the arm muscles for crawling, hanging from a bar, and so on. Fine motor skills, on the other hand, involve body movements based on activities that rely on small muscles, such as the muscles of the fingers for squeezing, sticking, shaping playdough, stringing beads, writing, and drawing. This aligns with Ariani et al., (2022), who states that motor development consists of gross motor development and fine motor development. Gross motor activities involve large muscles and require more energy, whereas fine motor activities tend to involve smaller muscles and coordination between body parts such as the eyes and hands.

There are many methods for stimulating early childhood development, particularly in the area of motor skills both gross and fine motor skills and one such method involves the use of educational media as teaching aids (Nur et al., 2023). Educational media refers to tools designed to assist educators in conveying information so that it is easily understood. This is further reinforced by Adhe (2020)

in his book titled *Media Pembelajaran PAUD (Early Childhood Education Learning Media)*, which states that learning media are tools that can help teachers or educators convey information. This makes it easier for students to understand the information provided by their teachers. Therefore, teaching media need to be adapted to the material being taught so that learning objectives can be easily achieved.

Educational media certainly offer a variety of benefits; not only do they facilitate the achievement of learning objectives, but they also help teachers convey information that would otherwise be delivered orally, making the learning environment more enjoyable and preventing children from becoming bored with their learning activities. According to Nur et al., (2023)., the use of educational media in early childhood education institutions differs from that in higher levels of education. In early childhood education, learning media are divided into three types: worksheets (LKA), learning aids (APP), and educational toys (APE). Educational toys (APE) are a type of learning media that is highly beneficial for supporting children's skills from an early age, particularly in optimizing their growth and development. According to Agustia (2023), educational toys are play tools designed to educate children and support their learning process, particularly in enhancing their overall skills. The purpose of APE is to serve as a medium that stimulates children's learning activities through play, whether utilizing modern technological sophistication or simple technologies that retain the characteristics of traditional games. Through the use of APE, children indirectly learn new things without realizing that the activities they are engaged in contain educational elements; they remain unaware of this because they are learning while playing. Therefore, when creating APE, it must be made as engaging as possible to attract children to use it.

In addition to the appeal of an educational toy, the process of creating such toys must also take into account children's needs and age levels. This is because providing inappropriate educational toys will inevitably hinder the progress of certain aspects of a child's development, particularly in the area of motor skills. Furthermore, when creating or implementing educational toys, safety and security must be prioritized alongside educational value. This ensures that the educational toy is both appropriate and effective. Therefore, educational toys for children must

be designed in accordance with the specific criteria for educational toys intended for children.

In early childhood education, the criteria for educational toys (APE) used are those specifically designed to meet children's educational and developmental needs. These criteria include an attractive product design, a purpose to support the learning process, benefits in enhancing various aspects of child development, adaptation to the child's age level, and safety considerations regarding the materials used in the educational toys. Based on these criteria, educational toys offer numerous benefits for both educators and students. For educators, one key benefit is that they serve as tools to assist in explaining lesson material, making it easier for educators to convey information in line with learning objectives. For children as students, the benefits include not only serving as a medium to optimize various aspects of child development but also as a means of play and a fun learning tool for children.

Another benefit of educational toys is that they help stimulate the motor development of young children. Essentially, educational toys designed to stimulate motor skills don't have to be purchased; they can also be made at home using your own creativity. Creating APE for young children doesn't have to involve fancy or expensive concepts; instead, it can be adapted by making them yourself using simple tools and materials found in the surrounding environment items that are easily accessible and relatively inexpensive, such as materials made from recycled items. One example is the TUSANTA APE, which is made from recycled items like plastic buckets and used jars as the base materials for creating the APE.

APE TUSANTA stands for APE Tugu Nusantara, which comprises four types of educational games, two of which are traditional games specifically designed to help optimize children's motor skills. This APE is the result of the researcher's efforts to innovate learning materials using recycled items such as plastic buckets and unused plastic jars. The name APE TUSANTA (Tugu Nusantara) was chosen because the researcher was inspired by the name of Indonesia's new capital, known as Ibu Kota Nusantara (IKN), located on the island of Kalimantan. Here, "Nusantara" refers to a region encompassing a diverse array of cultural, religious, and traditional wealth, including traditional attire, traditional houses, region-

specific traditional games, regional cuisine, places of worship, ethnic groups, and races.

The reason the researcher conceived the idea of creating the TUSANTA (Tugu Nusantara) educational aid was due to a problem in optimizing children's motor development at RA Muslimat NU Rowolaku in Pekalongan Regency. This problem arose due to a lack of learning media at the school, particularly educational toys that could enhance children's motor skills. Additionally, the existing teaching methods remained monotonous and lacked supporting visual aids. This was evidenced by the frequent use of worksheets as the primary classroom activity. Consequently, children tended to frequently leave and re-enter the classroom because they felt bored with the traditional learning approach and the limited availability of visual aids.

In the initial stage, the researcher conducted a brief survey through observation at RA Muslimat NU Rowolaku in Pekalongan Regency. The aforementioned issues were identified by directly observing the situation. The researcher then conducted brief interviews with informants classroom teachers using an interview guide tailored to the research needs, to further substantiate the problems related to children's motor development at the school. The researchers then concluded as follows: children's motor development remains suboptimal, partly due to a lack of educational media or learning aids specifically APE materials designed to train children's motor skills.

Given these challenges, there is a need for innovative educational media capable of enhancing children's engagement while optimally stimulating their motor development. One innovation developed in this study is APE TUSANTA (Tugu Nusantara), an educational toy made from recycled materials that combines traditional and modern games. This medium serves not only as a tool for motor stimulation but also as a means of cultural introduction and the repurposing of waste into an educational medium. The novelty of this study lies in the development of eco-friendly educational toys that integrate traditional Nusantara games with modern learning approaches into a single integrated medium to improve the motor skills of young children. This approach has not been extensively studied in previous

research, which generally focused only on the use of educational toys without integrating cultural values and environmental sustainability aspects.

This study aims to develop and test the effectiveness of the APE TUSANTA in improving the motor skills of early childhood students at RA Muslimat NU Rowolaku, Pekalongan Regency. This study employs a field research design with a Research and Development (R&D) approach. The development procedure follows Sugiyono's steps, which include identifying potential and issues, data collection, product design, design validation, design revision, and product testing. Data collection techniques include observation, interviews, questionnaires, and documentation. Data analysis employed a mixed-methods approach, combining qualitative and quantitative analysis using a Likert scale to assess the feasibility and effectiveness of the product. The research questions were as follows: (1) what is the development process of the TUSANTA educational toy, (2) what is the feasibility of the TUSANTA educational toy, and (3) how effective is the TUSANTA educational toy in improving the motor skills of young children.

METHOD

This study employed a field research approach with a research and development (R&D) design, conducted at RA Muslimat NU Rowolaku in Pekalongan Regency. The development model was based on the concept proposed by Borg and Gall (as cited in Pertiwi & Jailani, 2023), which emphasizes that development research aims to create and validate educational products as solutions to practical problems. In this study, the product developed is the APE TUSANTA learning medium to improve the motor skills of children aged 4–6 years. The development procedure was based on Sugiyono's model (as cited in Siregar, 2023), modified into six stages: potential and problems, data collection, product design, design validation, design revision, and product testing. This modification was made because the study focused on testing the product's feasibility, taking into account time and cost constraints. Data collection was conducted in stages through initial observations to identify children's learning conditions and motor development, interviews with classroom teachers to identify media needs, and the distribution of questionnaires to subject matter experts, media experts, and users to assess the

product's feasibility and practicality. Documentation was used as supporting data throughout the research process. The research instrument consisted of a questionnaire using a Likert scale, which was used during the preliminary study, validation, and product testing phases.

Data analysis employed a mixed-methods approach, which combines qualitative and quantitative analysis. Qualitative data were analyzed through the stages of data reduction, data presentation, and drawing conclusions to interpret the results of observations, interviews, and input from experts and users. Meanwhile, quantitative data were analyzed using quantitative descriptive techniques by calculating questionnaire scores, which were then converted into percentages (Damayanti et al., 2018). A Likert scale was used to measure respondents' perceptions of the product (Pranatawijaya et al., 2019). The results of the analysis were then categorized into levels of suitability: highly suitable, suitable, unsuitable, and highly unsuitable (Sari, 2022). A product was deemed suitable if it achieved at least the "suitable" category. Additionally, the product's effectiveness was determined based on the achievement of child motor development indicators, with a minimum category of "developing as expected" (BSH).





DISCUSSION

The development of APE TUSANTA to enhance children's motor skills was carried out by applying Sugiyono's development model, which also incorporates the research and development steps proposed by Borg and Gall. This development resulted in educational learning materials in the form of educational toys containing a variety of traditional Indonesian games as well as simple modern games. The researcher utilized only six of the ten development stages outlined by Sugiyono in the development of APE TUSANTA, namely: First, the potential and problem identification stage, derived from the results of interviews and pre-research observations conducted at RA Muslimat NU Rowolaku. The identified potential was the large number of students, which necessitated adequate learning media. This was particularly evident in Class B, which had more students than Class A, so Class B was divided into two classes, namely Class B1 and B2.

The problem, however, is the limited availability of physical motor skills learning materials, which still rely on outdated resources, causing children to lose interest. Additionally, worksheets and magazines are often used as the primary learning materials for core classroom activities. This restricts the children's range of motion, preventing them from fully optimizing their motor skill development. Another issue is the use of monotonous teaching methods, such as traditional teaching methods and lecture-based approaches that are more teacher-centered than student-centered as the core methods of classroom instruction. The final issue is that teachers' educational backgrounds consist of bachelor's degrees in fields other than early childhood education, resulting in limited expertise regarding the early childhood education sector. Consequently, teachers lack innovation in utilizing everyday objects such as recycled materials as effective learning media to enhance children's motor skills.

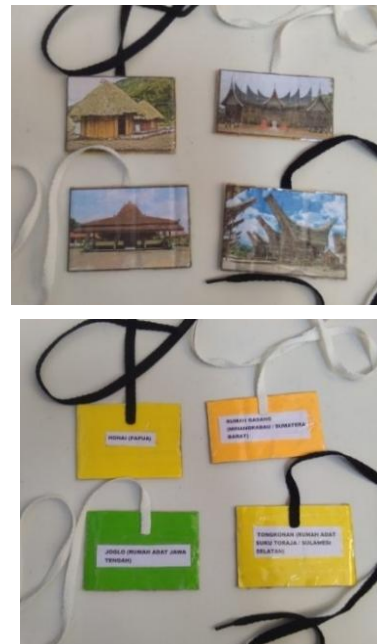
Based on the potential and issues identified, the researcher took the initiative to develop an educational tool in the form of a unique and unprecedented educational game, such as APE TUSANTA, designed to enhance motor development in children aged 4–6 years at RA Muslimat NU Rowolaku, Pekalongan Regency. Second, the data collection phase, where the process of gathering information for this study began with interviews, observations, documentation, questionnaires, and scales at RA Muslimat NU Rowolaku in Pekalongan Regency. Third, the product design phase, during which the researcher created a design for the educational game tool TUSANTA (Tugu Nusantara) to improve children's motor skills. The product design began with the creation of a product concept map, which included the theme and subthemes, product name, objectives, target users, tools and materials, benefits, and various types of games that can help improve children's motor skills. Below is the design of the TUSANTA educational game:

Table 1. Game Design for APE TUSANTA (Tugu Nusantara)

| No. | Additional information | Image |
|-----|--|---|
| 1 | Display APE TUSANTA |  |
| 2 | Part 1: Guess the Place of Worship Game (TEPATI) |  |
| 3 | Figure 6 Places of Worship in Indonesia (Mosques, Protestant Churches, Catholic Churches, Hindu Temples, Buddhist Temples, and Chinese Temples) |  |
| 4 | Part 2 Traditional House Guessing Game (TERA) |  |

5

Figure 4: Traditional Houses in Indonesia
(Joglo House from Central Java, Tongkonan House from South Sulawesi, Gadang House from West Sumatra, and Honai House from Papua)



6

Section 3
Rubber Rope Jumping Game
(LOTKA)



7

Section 4
Modern Color Congklak Game
(CONAMO)



Fourth, the design validation stage. In this design validation stage, the completed APE is then validated by subject matter experts, media experts, and

media user experts. The results of the validation of the TUSANTA APE by subject matter experts, media experts, and media user experts are as follows:

Table 2. Assessment of APE TUSANTA Materials

| No. | Statement Item | Assessment | | | |
|---------------|--|------------|---|---|---|
| | | 1 | 2 | 3 | 4 |
| | Core content | | | | |
| 1. | The suitability of APE TUSANTA for introducing Indonesia's diversity, which includes various places of worship, traditional houses, and traditional games. | | | √ | |
| 2. | The correspondence between the images of places of worship for various religious groups included in the APE TUSANTA and their actual names and religions. | | | | √ |
| 3. | The correspondence between the images of traditional houses in the APE TUSANTA and their actual names and regions of origin. | | | | √ |
| 4. | The alignment of APE TUSANTA with gross motor development indicators for children aged 4–6 years. | | | | √ |
| 5. | The alignment of APE TUSANTA with the fine motor development indicators for children aged 4–6 years. | | | | √ |
| 6. | The alignment of the combined game concept blending modern and traditional games in APE TUSANTA with the actual reality of APE TUSANTA. | | | √ | |
| | Supporting information | | | | |
| 7. | The alignment of the APE TUSANTA manual or guidelines with the core curriculum. | | | | √ |
| 8. | The clarity of the APE TUSANTA handbook in providing instructions for each game. | | | | √ |
| | Additional content | | | | |
| 9. | Developing religious and moral values in young children. | | | | √ |
| 10. | Developing cognitive skills in young children. | | | | √ |
| 11. | Developing language skills in young children. | | | | √ |
| Total | | 42 | | | |
| Average Score | | 3,8 | | | |

| | |
|------------|--------------------|
| Percentage | 95,4% |
| Rating | Highly Recommended |

Table 2. above presents the results of the subject matter experts' evaluation of the APE TUSANTA materials. In this study, the researcher used a Likert scale, formulas, and media suitability categories in accordance with data analysis guidelines. The evaluation results show a total score of 42 points and an average score of 3.8, representing a 95.4% score and falling into the "Highly Suitable" category, based on 11 indicator elements.

Table 3. Evaluation of the APE TUSANTA Media

| No. | Statement Points | Assessment | | | |
|-----|--|------------|---|---|---|
| | | 1 | 2 | 3 | 4 |
| | Core content | | | | |
| 1. | The accuracy of the presentation of material regarding the characteristics of the four types of games in APE TUSANTA compared to the actual game formats. | | | | √ |
| 2. | The images in APE TUSANTA, such as those of traditional houses and places of worship, look great. | | | √ | |
| 3. | The images in APE TUSANTA, such as those of traditional houses and places of worship, are easily recognizable. | | | √ | |
| 4. | APE TUSANTA is the perfect fit for children ages 4–6. | | | | √ |
| 5. | The materials used in APE TUSANTA are safe and comfortable for children to use. | | | | √ |
| 6. | The alignment of APE TUSANTA with the characteristics of APE suitable for children aged 4–6 years, as outlined in the APE TUSANTA guidebook, is as follows: <ul style="list-style-type: none"> a. APE is safe and hygienic, b. It involves hand-eye coordination and stimulates children to create works, c. It involves the process of sequencing and classification based on characteristics, has patterns, and trains logic, such as classifying objects based on their shape and color in the TERA (Guess the Traditional House) game by connecting | | | | √ |

| | | | | | |
|----|--|--|--|---|---|
| | <p>strings with pictures of traditional houses through colored tunnels to find the same shape of the traditional house. Then the TEPATI (Guess the Place of Worship) game, where children match the colors on the sticks with the colors of the holes on top of the bucket,</p> <p>d. Supports constructive activities for children that can be played with friends, such as LOTAKA (Jump Rope) and CONAMO (Modern Congklak),</p> <p>e. Helps stimulate letter recognition skills. These letter-recognition activities are found in two types of games: the TEPATI (Guess the Place of Worship) game and the TERA (Guess the Traditional House) game.</p> | | | | |
| 7. | The APE TUSANTA has a unique and attractive design. | | | √ | |
| 8. | <p>The suitability of APE TUSANTA in the LOTAKA (Rubber Rope Jumping) game for developing children’s gross motor skills aligns with the motor skill indicators for children aged 4–6 years listed in the APE TUSANTA handbook, as follows:</p> <p>a. Performing coordinated jumping and hopping movements,</p> <p>b. Performing coordinated body movements to develop flexibility, balance, and agility, such as when children jump over a rubber rope that is swung or stretched to a specific height so they can jump and move from one place to another,</p> <p>c. Engaging in physical activities following the rules of jump rope,</p> <p>d. Demonstrating proficiency in using both the right and left hands when alternating between holding and swinging the rope,</p> <p>e. Utilizing play equipment outside the classroom, such as playing jump rope on the school playground.</p> | | | | √ |
| 9. | The suitability of APE TUSANTA in the games TEPATI (Guess the Place of Worship), TERA (Guess the Traditional House), and CONAMO (Modern Colored Congklak) for developing children’s fine motor skills in accordance with the motor skill indicators for children aged 4–6 years | | | | √ |

| | | | | | |
|---------------|--|---------------|--|---|--|
| | <p>listed in the APE TUSANTA handbook is as follows:</p> <ol style="list-style-type: none"> a. Coordinating eyes and hands to perform movements such as threading a string with a traditional house image through colored channels to find the matching traditional house image in the TERA (Guess the Traditional House) game, b. Controlling hand movements that use fine motor muscles, such as clenching or holding pebbles as congklak seeds in the CONAMO (Modern Colored Congklak) game, c. Exploring through various media and activities, such as the TEPATI (Guess the Place of Worship) game, which not only involves guessing the name of a place of worship based on the religion practiced but also matching the color of the stick to the color of the hole in the bucket. | | | | |
| | Visual aspects of supporting media | | | | |
| 10. | The alignment of the APE TUSANTA user manual or instructions with the characteristics of the APE. | | | √ | |
| Number | | 36 | | | |
| Average Score | | 3,6 | | | |
| Percentage | | 90% | | | |
| Criteria | | Well Worth It | | | |

Table 3 above presents the results of an expert evaluation of the APE TUSANTA media. The evaluation results show a total score of 36 points and an average score of 3.6, with a 90% compliance rate, placing it in the “Highly Recommended” category based on the 10 evaluation criteria.

Table 4. User Evaluation of the APE TUSANTA Media

| No. | Statement Item | Assessment | | | |
|-----|---|------------|---|---|---|
| | | 1 | 2 | 3 | 4 |
| | Interest | | | | |
| 1. | Children are interested in playing APE TUSANTA. | | | | √ |
| | Ease of Use | | | | |

| | | | | | |
|---------------|--|---------------|--|---|---|
| 2. | Children can play APE TUSANTA easily. | | | | √ |
| 3. | Children can guess the names and images of places of worship and traditional houses based on the characteristics read aloud by the teacher or researcher from the APE TUSANTA guidebook. | | | √ | |
| 4. | Children can jump rope with balance and agility. | | | √ | |
| 5. | Children can learn the names of two traditional Indonesian games, such as jumping rope and congklak, in APE TUSANTA. | | | | √ |
| 6. | Children can match identical images and colors in the games TEPATI (Guess the Place of Worship) and TERA (Guess the Traditional House). | | | √ | |
| 7. | Children can correctly name places of worship and the religions they practice. | | | | √ |
| 8. | Children can correctly name traditional houses and their regions of origin. | | | √ | |
| 9. | Children can coordinate their eye and hand movements while playing APE TUSANTA. | | | √ | |
| | Safety aspects | | | | |
| 10. | Children actively play various games in APE TUSANTA without getting hurt. | | | | √ |
| Total | | 35 | | | |
| Average Score | | 3,5 | | | |
| Percentage | | 87,5% | | | |
| Criteria | | Well Worth It | | | |

Table 4 above presents the results of the assessment by media user experts regarding the APE TUSANTA educational media. The assessment results show a total score of 35 points and an average score of 3.5, representing 87.5% and falling into the “Highly Recommended” category, based on the 10 available indicator elements.

Fifth, the design revision stage: the developed APE TUSANTA learning media has undergone validation by subject matter experts, media experts, and media user experts. Following the completion of the validation process, the next step is the product design revision stage. This revision stage is conducted based on the considerations and suggestions provided by subject matter experts and media

experts to improve APE TUSANTA so that it is effective and achieves its intended objectives.

Sixth, the field testing phase, in which the product having been developed and validated by subject matter experts, media specialists, and teachers, and revised based on their feedback is then tested with students. Product testing in this study was conducted in two phases: a limited trial and a large-scale trial. The limited trial involved only a portion of the students from Class B2, while the large-scale trial involved all students in the same class. The following are the results of the limited and large-scale trials of the APE TUSANTA product:

Table 5. Results of the Limited Field Test on Gross Motor Skills of Children in Class B2 at RA Muslimat NU Rowolaku, Pekalongan Regency

| No. | Student Name | Achievement Indicator | | | | Total | Average Score | Percentage | Criteria |
|--|--------------|-----------------------|---|---|---|-------|---------------|------------|----------|
| | | 1 | 2 | 3 | 4 | | | | |
| 1 | ALN | 4 | 3 | 3 | 4 | 14 | 3,5 | 87% | BSB |
| 2 | GBN | 3 | 3 | 3 | 4 | 13 | 3,2 | 81% | BSB |
| 3 | ANS | 3 | 3 | 4 | 4 | 14 | 3,5 | 87% | BSB |
| 4 | ADB | 3 | 2 | 4 | 3 | 12 | 3,0 | 75% | BSH |
| 5 | AZK | 3 | 4 | 3 | 4 | 14 | 3,5 | 87% | BSB |
| 6 | SFA | 3 | 4 | 3 | 3 | 13 | 3,2 | 81% | BSB |
| 7 | ARN | 4 | 3 | 4 | 3 | 14 | 3,5 | 87% | BSB |
| 8 | ATR | 4 | 3 | 4 | 3 | 14 | 3,5 | 87% | BSB |
| 9 | ZZA | 3 | 3 | 4 | 3 | 13 | 3,2 | 81% | BSB |
| 10 | ILK | 3 | 2 | 4 | 3 | 12 | 3,0 | 75% | BSH |
| The average assessment score is 82% | | | | | | | | | |

Based on Table 5 above, regarding the children's gross motor development, it can be seen that two children are developing as expected (BSH), namely Adiba and Ilaik. Additionally, eight children are developing very well (BSB), namely Alena, Gibran, Annisa, Azril.K, Shofia, Airin, Altara, and Zaza.

Table 6. Results of a Limited Field Test on Fine Motor Skills in Children in Class B2 at RA Muslimat NU Rowolaku, Pekalongan Regency

| No. | Student Name | Achievement Indicator | | | | Total | Average Score | Percentage | Criteria |
|--|--------------|-----------------------|---|---|---|-------|---------------|------------|----------|
| | | 1 | 2 | 3 | 4 | | | | |
| 1 | ALN | 4 | 3 | 3 | 4 | 14 | 3,5 | 87% | BSB |
| 2 | GBN | 3 | 3 | 3 | 3 | 12 | 3,0 | 75% | BSH |
| 3 | ANS | 3 | 3 | 4 | 3 | 13 | 3,2 | 81% | BSB |
| 4 | ADB | 3 | 2 | 4 | 3 | 12 | 3,0 | 75% | BSH |
| 5 | AZK | 3 | 4 | 3 | 3 | 13 | 3,2 | 81% | BSB |
| 6 | SFA | 3 | 4 | 3 | 3 | 13 | 3,2 | 81% | BSB |
| 7 | ARN | 2 | 3 | 4 | 3 | 12 | 3,0 | 75% | BSH |
| 8 | ATR | 3 | 3 | 4 | 3 | 13 | 3,2 | 81% | BSB |
| 9 | ZZA | 2 | 3 | 4 | 3 | 12 | 3,0 | 75% | BSH |
| 10 | ILK | 3 | 3 | 4 | 3 | 13 | 3,2 | 81% | BSB |
| The average assessment score is 79% | | | | | | | | | |

Based on Table 6 above, regarding the children's fine motor development, it can be seen that four children are developing as expected (BSH), namely: Gibran, Adiba, Airin, and Zaza. Additionally, six children are developing very well (BSB), namely: Alena, Annisa, Azril.K, Shofia, Altara, and Ilaik.

Table 7 Results of the Comprehensive Field Assessment of Gross Motor Skills in Class B2 at RA Muslimat NU Rowolaku, Pekalongan Regency

| No. | Student Name | Achievement Indicator | | | | Total | Average Score | Percentage | Criteria |
|-----|--------------|-----------------------|---|---|---|-------|---------------|------------|----------|
| | | 1 | 2 | 3 | 4 | | | | |
| 1 | ATR | 4 | 4 | 4 | 3 | 15 | 3,7 | 93% | BSB |
| 2 | AZK | 4 | 3 | 4 | 3 | 14 | 3,5 | 87% | BSB |
| 3 | AZR | 4 | 4 | 3 | 4 | 15 | 3,7 | 93% | BSB |
| 4 | GBN | 4 | 4 | 4 | 4 | 16 | 4,0 | 100% | BSB |
| 5 | AA | 4 | 4 | 4 | 3 | 15 | 3,7 | 93% | BSB |
| 6 | ILK | 4 | 3 | 4 | 3 | 14 | 3,5 | 87% | BSB |
| 7 | KNZ | 4 | 4 | 3 | 4 | 15 | 3,7 | 93% | BSB |

| | | | | | | | | | |
|--|-----|---|---|---|---|----|-----|------|-----|
| 8 | ADB | 3 | 4 | 3 | 4 | 14 | 3,5 | 87% | BSB |
| 9 | ARN | 4 | 4 | 4 | 4 | 16 | 4,0 | 100% | BSB |
| 10 | ANS | 4 | 4 | 4 | 4 | 16 | 4,0 | 100% | BSB |
| 11 | AKY | 3 | 2 | 3 | 4 | 12 | 3,0 | 75% | BSH |
| 12 | GZL | 4 | 3 | 4 | 3 | 14 | 3,5 | 87% | BSB |
| 13 | HLY | 3 | 2 | 3 | 4 | 12 | 3,0 | 75% | BSH |
| 14 | ZZA | 4 | 3 | 4 | 3 | 14 | 3,5 | 87% | BSB |
| 15 | ALN | 4 | 3 | 4 | 3 | 14 | 3,5 | 87% | BSB |
| 16 | SFA | 4 | 3 | 4 | 3 | 14 | 3,5 | 87% | BSB |
| 17 | AQL | 2 | 3 | 3 | 2 | 10 | 2,5 | 62% | BSH |
| 18 | AGN | 3 | 3 | 3 | 3 | 12 | 3,0 | 75% | BSH |
| 19 | SHF | 4 | 3 | 4 | 3 | 14 | 3,5 | 87% | BSB |
| 20 | SR | 4 | 4 | 3 | 3 | 14 | 3,5 | 87% | BSB |
| 21 | FHM | 4 | 4 | 4 | 4 | 16 | 4,0 | 100% | BSB |
| The average assessment score is 87% | | | | | | | | | |

Based on Table 7 above, regarding the children's gross motor development, 17 children are developing very well (BSB), namely: Altara, Azril.K, Azril.R, Gibran, A'la, Ilaik, Kanza, Adiba, Airin, Annisa, Gizel, Zaza, Alena, Shofia, Shofi, Sari, and Fahmi. Additionally, there are 4 children who are developing as expected (BSH), namely: Azkiya, Hilya, Aqilla, and Anggun.

Table 8 Results of the Comprehensive Field Assessment of Fine Motor Skills in Children in Class B2 at RA Muslimat NU Rowolaku, Pekalongan Regency

| No. | Student Name | Achievement Indicator | | | | Total | Average Score | Percentage | Criteria |
|-----|--------------|-----------------------|---|---|---|-------|---------------|------------|----------|
| | | 1 | 2 | 3 | 4 | | | | |
| 1 | ATR | 4 | 3 | 4 | 3 | 14 | 3,5 | 87% | BSB |
| 2 | AZK | 4 | 3 | 4 | 3 | 14 | 3,5 | 87% | BSB |
| 3 | AZR | 3 | 4 | 3 | 4 | 14 | 3,5 | 87% | BSB |
| 4 | GBN | 3 | 4 | 3 | 4 | 14 | 3,5 | 87% | BSB |
| 5 | AA | 4 | 4 | 3 | 4 | 15 | 3,7 | 93% | BSB |
| 6 | ILK | 3 | 3 | 4 | 4 | 14 | 3,5 | 87% | BSB |
| 7 | KNZ | 4 | 4 | 3 | 3 | 14 | 3,5 | 87% | BSB |
| 8 | ADB | 3 | 4 | 3 | 3 | 13 | 3,2 | 81% | BSB |

| | | | | | | | | | |
|--|-----|---|---|---|---|----|-----|-----|-----|
| 9 | ARN | 4 | 3 | 4 | 4 | 15 | 3,7 | 93% | BSB |
| 10 | ANS | 3 | 3 | 4 | 4 | 14 | 3,5 | 87% | BSB |
| 11 | AKY | 4 | 4 | 2 | 3 | 13 | 3,2 | 81% | BSB |
| 12 | GZL | 4 | 3 | 3 | 3 | 13 | 3,2 | 81% | BSB |
| 13 | HLY | 4 | 3 | 3 | 3 | 13 | 3,2 | 81% | BSB |
| 14 | ZZA | 4 | 4 | 4 | 3 | 15 | 3,7 | 93% | BSB |
| 15 | ALN | 4 | 4 | 4 | 3 | 15 | 3,7 | 93% | BSB |
| 16 | SFA | 4 | 3 | 4 | 3 | 14 | 3,5 | 87% | BSB |
| 17 | AQL | 2 | 2 | 2 | 2 | 8 | 2,0 | 50% | MB |
| 18 | AGN | 3 | 3 | 3 | 4 | 13 | 3,2 | 81% | BSB |
| 19 | SHF | 4 | 4 | 3 | 3 | 14 | 3,5 | 87% | BSB |
| 20 | SR | 3 | 4 | 4 | 3 | 14 | 3,5 | 87% | BSB |
| 21 | FHM | 3 | 3 | 3 | 4 | 13 | 3,2 | 81% | BSB |
| The average assessment score is 84% | | | | | | | | | |

Based on Table 8 above, regarding children's fine motor development, it can be seen that 20 children are developing very well (BSB), namely: Altara, Azril. K, Azril.R, Gibran, A'la, Ilaik, Kanza, Adiba, Airin, Annisa, Gizel, Zaza, Alena, Shofia, Shofi, Sari, Azkiya, Hilya, Anggun, and Fahmi. Additionally, there is 1 child who is beginning to develop (MB), namely: Aqilla.

Based on the results of an assessment conducted on 21 students in Class B2 at RA Muslimat NU Rowolaku in Pekalongan Regency during a large-scale field test, the educational media product APE TUSANTA achieved scores of 87% and 84% in the categories of "Beginning to Develop" (MB), "Developing as Expected" (BSH), and "Developing Very Well" (BSB). This indicates that the APE TUSANTA product meets the expected standards and is suitable for use.

The Development Process of the APE TUSANTA Learning Media

The development process of the APE TUSANTA learning media began with an in-depth analysis of the potential and challenges present at the school. This analysis was based on the results of interviews and pre-research observations conducted in Class B2 at RA Muslimat NU Rowolaku, Pekalongan Regency. The potential identified at the school includes a relatively large number of students, particularly those in Class B. However, several issues were noted, such as the

limited availability of learning media, which are generally outdated and unengaging for students, leading them to become bored quickly. Additionally, the teaching methods remain monotonous. Furthermore, the teachers' highest level of education is not in the field of early childhood education, resulting in limited knowledge in this area. This lack of expertise hinders their ability to innovate by utilizing everyday objects such as recycled materials to create learning materials that effectively support children's developmental needs.

The potential and challenges identified in schools motivated the researcher to create a product that could facilitate the learning process. To this end, the researcher collected data through interviews with classroom teachers and preliminary observations at RA Muslimat NU Rowolaku, Pekalongan Regency. Additionally, the researcher gathered data through documentation, questionnaires, and rating scales. Based on the results of the data collection, the researchers began designing a learning media product called APE TUSANTA. The design of the APE TUSANTA product is the result of the development of learning media to improve children's motor development, based on a needs analysis derived from interviews with teachers and observations at the school.

The name APE TUSANTA is inspired by the name of the Capital of Nusantara (IKN), which is Indonesia's new capital located on the island of Kalimantan. APE TUSANTA stands for Alat Permainan Edukatif Tugu Nusantara, reflecting the cultural richness of Indonesia. APE TUSANTA is an educational toy designed not only to enhance children's motor skills but also to introduce Nusantara a region rich in diverse ethnic groups, races, religions, cultures, customs, and more in a simple and enjoyable way through play. APE TUSANTA products are made using recycled materials such as plastic buckets, trash cans, plastic jars, plastic cups, plastic bowls, and used cardboard, all processed in an environmentally friendly manner.

APE TUSANTA offers four types of games designed to improve children's gross and fine motor skills, namely: First, the TEPATI/Guess the Place of Worship game, which teaches children about the six places of worship found in Indonesia, such as mosques, Protestant churches, Catholic churches, Hindu temples, Buddhist temples, and Chinese temples. This game serves to develop children's fine motor

skills. Second, the TERA/Guess the Traditional House game introduces children to four traditional houses found in Indonesia, such as the Joglo house from Central Java, the Tongkonan house from South Sulawesi, the Gadang house from West Sumatra, and the Honai house from Papua. This game also focuses on improving children's fine motor skills. Third, the LOTAKA/Rubber Rope Jumping game is a traditional game from the Indonesian archipelago introduced to children with the aim of preserving Indonesian culture. This game is designed to improve children's gross motor skills. Fourth, the game CONAMO/Modern Colored Congklak is a modified version of the traditional Dakon game originating from the island of Java, specifically Central Java, and in Indonesia, this game is known as congklak. This game can only be played by two players. The Modern Colored Congklak (CONAMO) game serves to train children's fine motor skills.

After the APE TUSANTA educational materials were developed, the next step was validation by subject matter experts, media experts, and user experts. This process aimed to ensure that the developed materials met the established standards. Based on the validation results, revisions were made in accordance with the suggestions provided by the validators. In this study, one of the revisions made was to the "TEPATI" or "Guess the Place of Worship" game, where the number of places of worship, originally five, was updated to six places of worship found in Indonesia. Additionally, the content expert revised the media's structure by suggesting the addition of color to make the media's appearance more appealing. Furthermore, revisions by the media expert included changes to the media's shape, which was originally not tower-like, into a form resembling a tower. This tower shape tapers upward, with added elements that emphasize the media's character. Not only that, but the media expert also revised the user manual for APE TUSANTA, specifically the section on recommended usage steps, which were suggested to be presented in numerical format rather than descriptive text, to make it easier for users to operate the media.

After all revisions were made and the teaching materials were deemed suitable, the next step was the product pilot test. This pilot test was conducted in Class B2 at RA Muslimat NU Rowolaku, Pekalongan Regency, in two phases: the first phase was a limited pilot test with 10 students, and the second phase was a full-

scale pilot test with 21 students on a different day. The results of the testing showed an improvement in the children's motor skills both gross and fine motor skills after using the revised teaching material.

Media Suitability as Assessed by Subject Matter Experts, Media Experts, Media Users, and Field Test Results

The feasibility testing of the APE TUSANTA media was conducted through a validation process by experts, namely content experts, media experts, and media user experts. The content validation was performed by Mr. Irfan Haris, M.Pd., a lecturer at UIN K.H. Abdurrahman Wahid Pekalongan, who possesses expertise in educational content, particularly in the field of early childhood education. Media expert validation was conducted by Mr. A. Tabiin, M.Pd., also a lecturer at UIN K.H. Abdurrahman Wahid Pekalongan, who possesses expertise in the field of educational media, particularly for early childhood. Meanwhile, the media user expert validation was conducted by Ms. Qomariyah, S.Pd.I., a B2-grade teacher at RA Muslimat NU Rowolaku, Pekalongan Regency, who evaluated the extent to which the media can be effectively implemented and used in the field by its users. This validation process aims to ensure that the APE TUSANTA media is suitable for use in the context of early childhood education.

Based on the validation results conducted by several experts on the APE TUSANTA media, the findings can be summarized as follows: First, the assessment results conducted by subject matter experts indicate that the average score for the 11 assessment indicators was 3.8, with a total score of 42 out of 44, resulting in a suitability percentage of 95.4%, thereby categorizing it as "Highly Suitable." Based on these validation results, the APE TUSANTA product can be deemed suitable for use. Second, the assessment results conducted by media experts indicate that the average score for the 10 assessment indicators is 3.6, with a total score of 36 out of 40, resulting in a suitability percentage of 90%, thus categorizing it as "Highly Suitable." Based on these validation results, the APE TUSANTA product can be deemed suitable for use. Third, the assessment results conducted by media user experts indicate that the average score across the 10 evaluation indicators is 3.5, with a total score of 35 out of 40, resulting in a suitability percentage of 87.5%,

thereby categorizing it as “Highly Suitable.” Based on these validation results, the APE TUSANTA product can be deemed suitable for use. Fourth, the field trial, in which APE TUSANTA was evaluated and deemed suitable by experts to serve as a learning medium that can assist teachers in efforts to improve children’s motor skills.

The researcher conducted observations at RA Muslimat NU Rowolaku in Pekalongan Regency. The researchers first conducted interviews and observations regarding children’s motor development in Class B at RA Muslimat NU Rowolaku, Pekalongan Regency, before moving on to the field testing phase of the APE TUSANTA development product. The APE TUSANTA product testing was conducted in two stages: first, a limited field trial, and second, a large-scale field trial. In the limited field trial, there were 10 students as subjects, and the research results showed that 2 children developed as expected (BSH) and 8 children developed very well (BSB) for gross motor skills, while 4 children developed as expected (BSH) and 6 children developed very well (BSB) for fine motor skills. The next stage was a large-scale field trial with 21 students as subjects, and the results showed that 4 children developed as expected (BSH) and 17 children developed very well (BSB) in terms of gross motor skills, while 1 child began to develop (MB) and 20 children developed very well (BSB) in terms of fine motor skills.

It can be concluded that the results of the limited field trial and the large-scale field trial showed a 5% increase in children’s achievement rates, with an average rate of 82% in the limited field trial and an average rate of 87% in the large-scale field trial for gross motor skills, as well as an average percentage of 79% in the limited field trial and an average percentage of 84% in the large-scale field trial for fine motor skills. In this context, based on the results of interviews, observations, and field trials in Class B2 at RA Muslimat NU Rowolaku, Pekalongan Regency, it can be concluded that children experienced improved motor development, both gross and fine motor skills, after using the APE TUSANTA. Based on the presentation of the research results and discussion, as well as the analysis of both, it can be stated that the APE TUSANTA product is suitable for use in helping to

improve the motor development of children aged 4–6 years in Class B2 at RA Muslimat NU Rowolaku, Pekalongan Regency.

CONCLUSION

Based on the research findings and discussion, it can be concluded that the development of the APE TUSANTA learning media in this study was carried out in six stages, namely: First, the initial potential and problems identified were that the potential at the school under study lay in the large number of students, particularly those in Class B2, and the problem identified was the limited availability of learning media to help improve children's motor skills due to a lack of innovation on the part of teachers in utilizing items found in their surroundings, such as recycled materials. Second, data collection through interviews with classroom teachers, initial observations, documentation, questionnaires, and scales. Third, the product design consists of the Tugu Nusantara Educational Game Set (APE TUSANTA), made from recycled materials, and featuring four types of games designed to improve children's gross and fine motor skills, such as the TEPATI/Guess the Place of Worship game, TERA/Guess the Traditional House game, LOTAKA/Jump the Rubber Rope, and CONAMO/Modern Color Congklak. Fourth, the product design validation yielded the following results: 95.4% from subject matter experts, 90% from media experts, and 87.5% from media user experts. Fifth, the product design was revised in accordance with the comments and suggestions provided by the validators. Sixth, product testing yielded results showing that the APE TUSANTA media was capable of improving children's gross and fine motor skills through limited field trials and extensive field trials, with each trial yielding a 5% increase in the respective percentages. Regarding gross motor skills, the limited field trial yielded an 82% improvement, while the extensive field trial yielded 87%; for fine motor skills, the limited field trial yielded a 79% improvement, and the extensive field trial yielded 84%.

The feasibility of APE TUSANTA as a learning medium for improving children's motor skills has met the feasibility criteria based on validation by subject matter experts (95.4%), media experts (90%), and media user experts (87.5%). Thus, based on the scoring conversion where percentages ranging from 80% to 100% indicate that the developed medium falls into the "highly valid" or "feasible

for use” category the development of this medium has been deemed highly valid or suitable for use.

Based on the above conclusions, the researcher offers the following recommendations: First, teachers are encouraged to create innovative learning media that are beneficial and made from recycled materials found in their surroundings as an alternative to enhance children’s motor development. Second, for future researchers, this study was limited to the development of the APE TUSANTA media, which was designed solely to improve gross and fine motor skills, and the product testing was conducted only within the vicinity of Pekalongan Regency; therefore, the researcher hopes that future studies in developing other APE TUSANTA media can provide functions beyond enhancing children’s motor skills to also improve other developmental aspects, and that product testing can be conducted in a broader geographical scope.

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