

DEVELOPMENT OF MULTIFUNCTIONAL CUBOID APE TO STIMULATE MOTOR ACTIVITIES IN CHILDREN AGED 4-5 YEARS IN PAUD ISTIQOMATUDDIN NURUL MU'ARIF PIDIE

Putri Rahmi

Universitas Islam Negeri Ar-Raniry Banda Aceh
putri.rahmi@ar-raniry.ac.id

Zikra Hayati

Universitas Islam Negeri Ar-Raniry Banda Aceh
zikra.hayati@ar-raniry.ac.id

Abstract

Based on the author's initial observations at PAUD Istiqamatuddin Nurul Muarif regarding using APE during learning, the PAUD has used several APEs in learning. However, the APE used was not adequate to train fine motor development and did not vary to attract children's interest. The purpose of the study was to develop and see the feasibility of APE Multifunction Beams in developing fine motor skills for children aged 4-5 years. The type of research used is Research and Development (R&D) using the ADDIE model using Dick and Carey Theory which consists of five stages, namely Analysis, Design, Development, Implementation, and Evaluation. With instrument validation sheet material experts and media experts as well as children's observation sheets. Based on the assessment of 2 APE validation and 2 material experts, for material expert validation the total scores from V1 and V2 are 69 and 67, so the maximum total score is 80, so that the percentage results are 80% and 86% which fall into the very feasible category. While the APE validation scores V1 and V2 are 69 and 67, the number of frequencies is 16, so that the percentage results are 86.25% and 83.75% which are in the very feasible category. Then for the results of the observation sheet the child's fine motor skills got a score from the validator of 308, with the number of questions as many as 5 multiplied by 15 children, then the ideal total score obtained was 375 so as to obtain a percentage result of 82.13% which was included in the very feasible category. Based on these results, it can be concluded that the multifunctional APE beam can develop fine motor skills for children aged 4-5 years and is very suitable for use in the learning process.

Keyword: Multifunctional APE, Motoric Activities.

INTRODUCTION

The development of children's fine motor skills requires stimulation to develop optimally, such as physical assistance and mental maturity of children, thus making children more confident in doing various things, for example drawing. Children's fine motor skills begin to develop at the age of 3 years. Children's fine motor development is trained by involving certain body parts and

using small muscles, such as finger movements and wrist movements. Fine motor movements are movements that rely on certain parts of the body and only involve small muscles, for example the ability to use the fingers and wrist which requires precision and hand and eye coordination.¹

APE is any game tools that can be used as a means or equipment for playing which contains educational value. Educational game tools are game tools designed to train children's growth and development which contain educational values.² Educational game tools should have several characteristics such as: multifunctional, meaning that they can be used based on the purpose, benefits and also have various forms, are able to develop aspects of children's development and are safe for use by preschool children.

Playing is an activity carried out with or without using tools that produce information. Provides fun and develops children's imagination³. Playing creates meaningful, fun, challenging experiences.⁴ Based on the results of the author's initial observations at PAUD Istiqamatuddin Nurul Muarif regarding the use of APE during learning, it shows that PAUD has used several APE in learning. However, the APE of used is not sufficient to train fine motor development and is not varied enough to attract children's interest. During the learning process, teachers use Lego in playing and writing activities, which results in children becoming less enthusiastic about the learning process. This has the impact of hampering the development of children's fine motor skills, so that they are unable to use writing instruments properly and appear stiff in moving their fingers. Based on Permendikbud no. 137 of 2014 children aged 4-5 years are able to draw horizontal and vertical lines and are able to coordinate eye and hand movements.⁵

In fact, early childhood enjoy exploring themselves through movement in various activities.⁶ The APE used should be able to stimulate all child development according to age stages, of course by taking in account the unique character traits of each individual. Educational

¹ Harahap Febrianti. & Seprina. *Kemampuan Motorik Halus Melalui Kegiatan Melipat Kertas Origami. Journal Of Islamic childhood Education*. Vol.02. No. 2. 2019, hal. 3.

² Hasanah, Usawatul. *Penggunaan Alat Permainan Edukatif (APE) Pada Taman Kanak-Kanak Di Kota Metro Lampung, Jurnal AWLADY Jurnal Pendidikan Anak*. Vol. 5, No. 1, Maret 2019, hal. 23.

³ Sudono dan Mulyadi, *Belajar Melalui Bermain*, Jakarta: My Book AlMawardi, 2011, hal. 22.

⁴ Catherine Cythia Kusuma dan Hedy C. Indrani. *Perancangan Mebel Multifungsi Bermain Motorik untuk Kegunaan Pertumbuhan Balita di Rumah. Jurnal Intra*. Vol.5, No. 2, 2017, hal. 372.

⁵ Permendikbud Nomor 137 Tahun 2014, tentang Standar Nasional Pendidikan Anak Usia Dini, *Standar Isi tentang Tingkat Pencapaian Perkembangan Anak*.

⁶ Mukhtar, Nurkamelia AH, *Penggunaan Alat Permainan Edukatif Dalam Menstimulasi Perkembangan Fisik-motorik Anak Usia Dini. Jurnal Program Studi PGRA*. Vol.4. No. 2. 2018, hal. 126.

game tools such as blocks are game tools that have great potential to increase children's motivation and interest in expressing themselves.

Activities that use objects around them, such as buttoning and attaching ropes, for children aged 4-5 years will change them so they are able to use their fine motor skills in everyday life. This is because the activity of buttoning clothes can have a significant influence on a child's fine motor development.⁷ Therefore, varied APE is needed so that it attracts children's interest and fine motor skills develop optimally. One of the efforts made by the author to improve this situation is to develop varied APE. Having a variety of media will optimize and stimulate the fine motor development of children aged 4-5 years.

The use of APE should be utilized optimally, because APE is able to provide a good stimulus for every aspect of a child's development.⁸ such as research conducted by Fauziddin, namely the application of learning through playing with blocks in improving fine motor skills in early childhood. Based on statistical tests carried out, it shows a significant increase in children's fine motor skills by playing with blocks.⁹ Research gap from previous research only arranging blocks, and differences in terms of block size that will be developed by adapting to the characteristics of early childhood. Apart from that, this research focused on more than 1 diverse activity on each side of the beam. However, the difference between this research and previous research lies in the beam. The blocks used in this research function as a base or place to attach the game and also function as a storage box. Meanwhile, in previous research, the blocks used were small in size, 5.5 inches X 2 ¾ inches X 3/8, where fine motor development was trained by arranging the blocks. Research conducted by Nazirah, with the results achieved in this research, the wiping activity was able to improve children's fine motor skills and creativity, this is because children control hand movements with fine motor skills in this activity.¹⁰ The difference with the research that will be carried out is that it uses varied activities to improve fine motor skills, not only with wiping, but also with various other activities such as buttoning, wiping, tying rope,

⁷Khadijah, *Konsep Dasar Pendidikan Prasekolah*, Bandung: Cipta Pustaka Media Perintis Mandagi, Mieke O dan Ni Luh Putri, 2018, *Asesmen Pembelajaran AUD dan TK*, Perpustakaan Nasional, 2018, hal. 13.

⁸ Hayati, Zikra. *Penggunaan Alat Permainan Edukatif (APE) Dari Tutup Botol Plastik dan Koran Bekas Untuk Meningkatkan Kreativitas AUD*. Jurnal Awlady. Vol.5. No.1 Maret 2019. www.syekhnurjati.ac.id/jurnal/index.php/awlady. 2019, h. 59.

⁹ Fauziddin, Mohammad. *Penerapan Belajar Bermain Balok Dalam Meningkatkan Motorik Halus Anak Usia Dini*. Jurnal CARE. Vol.5, No.1 Juli 2017, hal. 7.

¹⁰ Nazirah Ulfa, dkk, *Mengembangkan Kemampuan Motorik Halus Anak Melalui Kegiatan Usap Abur Di TK Poeteumeurehom Banda Aceh*. Jurnal Ilmiah Mahasiswa Pendidikan Guru Anak Usia dini. Vol.4 No. 1 Februari 2019, hal. 7.

weaving and putting together puzzles, each activity is differentiated based on several levels of difficulty. Children's motor skills can be improved using their fingers, such as picking up objects with their fingers, moving objects from one hand to another.¹¹

This research will develop a multifunctional APE block in the form of a block, having five sides that can be played with by children. Each side has a different game so children can choose the game they like. The games available include on the right side, namely buttoning, on the left side, namely attaching ropes, on the front side, namely Puzzle, on the back side, namely Wipe abur, and on the top side, namely weaving. In APE, it's also uses colors to attract children's interest. This APE is made of wood which is safe for children to play with and each side of the game consists of three levels with different levels of difficulty. Educational game tools play an important role in the development of children's abilities including cognitive development and motoric development.¹² Based on empirical data, analysis of students' needs, various media are needed from game activities to exploring activities and the level of difficulty of the media. In the learning process, teachers need media which is durable, practical and varied.

RESEARCH METHODS

A. Research Design

The type of this research used R&D (Research and Development) using the ADDIE based model on Dick and Carey's theory.¹³ This model according to this theory emphasizes in performance analysis and needs analysis, an analysis of how each component interacts with each other or is related to one another in coordination according to its stage:

¹¹ Endayanti, Eka Setia 2017, *Meningkatkan Kemampuan Motorik Halus Melalui Kegiatan Meronce pada Anak Kelompok Bermain Masjid Syuhada*, Yogyakarta: Universitas Negeri Yogyakarta, hal. 113.

¹² Ariska, Feti. dkk. *Hubungan antara Stimulasi Alat Permainan Edukatid dengan Perkembangan Motorik kasar dan Halus Anak Usia Pre School di Sekolah TK Kabupataan Tegal*. *Jurnal SMART Keperawatan*. Vol.3 No. 1 Juni 2016, hal. 7.

¹³ Rayanto, Yudi Hari dan Sugianti, *Penelitian Pengembangan Model ADDIE dan R2D2*, Pasuruan: Lembaga Academic & Research Institute, 2020, hal. 77.



Figure 1: Research Chart of the ADDIE Models, Dick and Carey Theory ¹⁴

1. *Analysis*: Analyze the problems found when conducting observations, including PAUD that APE is not adequate to train fine motor development and is not varied, APE does not attract children's attention, analysis of the Dick and Carey theory, namely analysis of needs and performance
2. *Design*: Determining assessment and analysis instruments that are tailored to characteristics and abilities and adapted to the curriculum used. At this stage, 4 indicators must be met, namely: (1) paying attention to the ability of the desired design results in children, (2) measuring tools to measure success, (3) tools and materials needed, (4) game activities for the product being developed.
3. *Development*: The development stage is making the Multifunctional APE Beam. This theory focuses on production and selecting or combining products before and after development.
4. *Implement*: APE feasibility is carried out by testing the product by consulting validators (3 material experts and 3 APE experts)
5. *Evaluate*: The evaluation stage is the stage of assessing the feasibility results after obtaining data from validators and trials. ¹⁵.

¹⁴ Rayanto, Yudihari, *Model Penelitian Pengembangan ADDIE dan R2D2*, Pasuruan: Lembaga Academic dan research Institut Perum Sekar Indah Dua, 2020, hal. 56.

¹⁵ Arikunto, Suharsimi. *Prosedur Penelitian Suatu Pendekatan Praktik*, Jakarta: Rineka Cipta, 2006, hal.89.

B. Research Subjects

Research subjects are subjects used by researchers to be researched and become the center of attention and research targets. The target of this research is that educational game tools are needed that can develop the fine motor skills of children aged 4-5 years at PAUD Istiqamatuddin Nurul Muarif. And 4 validators consisting of 2 material experts; which was validated by Dr. Ifada Novikasari, M. Pd is a lecturer at UIN Prof K. H, Saifuddin Zuhri, Purwokerto, Central Java and Dewi Fitriani, M. Ed is a PIAUD Lecturer at UIN Ar-Raniry Banda Aceh as a PAUD Lecturer and Practitioner. Then 2 media experts, namely, Saptiani, M. Pd. I as a PAUD IAIN Langsa Lecturer and PAUD and Munawwarah practitioner. M. Pd is a PIAUD Lecturer at UIN Ar-Raniry Banda Aceh.

C. Research Instruments

1. Validation Sheet

The validation sheet in this research is divided into 2, namely the material expert validation sheet and the APE expert validation sheet which is used to measure feasibility. The validation criteria for material experts include: suitability of APE to learning objectives, suitability of material to the child's development stage, interest in the material, ability to motivate children.

2. Observation sheet

The observation sheet in this research is a sheet used to measure the fine motor development of children aged 4-5 years, to test the feasibility of the multifunctional APE beam product.

D. Data analysis technique

After collecting data, we continue with data analysis techniques. Data analysis techniques are carried out to formulate the results of research carried out by researchers. The results of this data analysis are the answer to the problem formulation The data analyzed is data from the results of validation sheets by experts/experts on the products being developed. In developing this APE, the data used is qualitative data by analyzing validation sheets that have been filled in by experts.

1. Feasibility Analysis Questionnaire

An assessment questionnaire is used to analyze the feasibility of the media being developed. An assessment questionnaire is given to validators to provide responses or comments on the APE being developed. After the assessment questionnaire is filled in by the validator, the researcher will carry out a validation test. The measurement scale used by researchers is the Likert scale. The Likert scale is a scale used to measure the attitudes, opinions and perceptions of a person or group

of people about social phenomena. On a Likert scale, the answer to each item is given a score of 1-5 and has a gradation from very positive to very negative.

Table: 1 APE Feasibility Measurement Scale

No	Percentage	Score	Category
1.	81-100%	5	Very feasible
2.	61-80%	4	decent
3.	41-60%	3	Doubtful
4.	21-40%	2	Not feasible
5.	0-20%	1	Totally Not feasible

Source: Sugiyono, 2021¹⁶

Keterangan:

- SL = Veryfeasible given a score : 5
- L = feasible given a score : 4
- RG = Doubtful given a score : 3
- TL = Not feasible given a score : 2
- STL = Totally Not feasible given a score : 1

Then to calculate the percentage of product feasibility assessment using the following formula:

$$X = \frac{\sum M}{Mmax} \times 100\%$$

Information:

- X : Percentage of value sought
- $\sum M$: The total score for each aspect of the assessment
- $Mmax$: Maximum score for each aspect of the assessment
- 100 : Constant number

¹⁶ Sugiyono. *Metode penelitian Kualitatif, Kuantitatif dan R & D*, Jakarta: Rineka Cipta, 2021, hal.89.

Table 2: Conversion of Likert Scale into Percentage

Score	Interval	Criteria
5	81% - 100%	Very feasible
4	61% - 80%	Decent
3	41% - 60%	Doubtful
2	21% - 40%	Not feasible
1	< 20%	Indecent

Source: Sugiono: 2019.¹⁷

1. Fine Motor Development Questionnaire AUD 4-5 years

This questionnaire contains data on children's observation sheets regarding learning using multifunctional blocks and is presented as a percentage using the following formula:

$$P = \frac{\sum x}{\sum X} \times 100\%$$

Keterangan:

- P = Percentage (%)
- $\sum x$ = Total score from validators
- $\sum X$ = The ideal total score
- 100 = Constant number. (Sutriyono, 2019:15).¹⁸

Before starting to calculate the percentage of validity of the media, first calculate the ideal score using the following formula:

Ideal Score = number of questions X number of total Likert scale scores

The ideal scale is used to determine the feasibility of the designed APE. The benchmarks for viewing the percentage of media eligibility can be seen in the following table:

Table 3 Percentage of Eligibility

Percentage	Information	Conversion Value
0% - 20%	Indecent	1
21% - 40%	Not feasible	2
41% - 60%	Doubtful	3
61% - 80%	feasible	4
81% - 100%	very feasible	5

Sumber: Nanda Dewi, 2018¹⁹

¹⁷ Sugiyono. (2019). Sugiyono. *ISSN 2502-3632 (Online) ISSN 2356-0304 (Paper) Jurnal Online Internasional & Nasional Vol. 7 No.1, Januari – Juni 2019 Universitas 17 Agustus 1945 Jakarta.*

¹⁸ Sutriyono Hariadi, *Implementasi Media Pembelajaran Berbasis Tik Teks Wawancara Bahasa Jawa Berbasis Blended Learning pada Siswa Kelas VII*, Probolinggo: Penerbit Buku-Buku, 2019, hal.15.

¹⁹ Nanda Dewi, R. Eka Murtinugraha dan Riyan Authur, “*Pengembangan Media Pembelajaran Interaktif pada Mata Kuliah Teori dan Praktik Plambing di Program Studi SI PVKB UNJ*” *Jurnal Pendidikan Teknik Sipil*, Vol.7, No.2, hal. 31.

The percentage results of the questionnaire provide information to researchers whether the media that has been developed is appropriate or not. Based on this table, APE Multifunctional Beams are said to be feasible if they obtain a percentage result of $\geq 61\%$.

RESULTS AND DISCUSSION

Description of Research Results

1. Development of Multifunctional Cuboid APE

1. The research procedures for research and development using the ADDIE model which were previously explained are as follows:

1) Analysis

Based on Dick and Carey's theory, it is necessary to carry out a performance and needs analysis. At this stage the researcher carried out an analysis of the needs and characteristics of children which was carried out using observation techniques and unstructured interviews with the class teacher so that there was a problem that in class A at PAUD Istiqamatuddin there was still a lack of fine motor development. children caused by the lack of variety of APE used in the learning process. A needs analysis is carried out with the aim of seeing the abilities that children need to improve according to the child's age development. Based on the analysis of children's characteristics, it can be concluded regarding children's needs as follows:

- a. Children are happier when learning using educational game tools, with game tools the child will be more interested and have fun when the learning process takes place. Because they think that they are not learning but playing.
- b. Lack of children's interest and enthusiasm for learning because the learning activities used are less varied, monotonous and boring so that children are less active during the learning process.






2) Design

APE is designed and technical in selecting tools and materials that are environmentally friendly for children so that they are safe and comfortable when used and there are aesthetic elements, namely elements of beauty such as color. At the design stage the researcher collects data and information in several stages including:

- 1) Dig up information through the alloy book for making multifunctional APE blocks. After getting references from the book, the researchers designed APE so that aesthetic values emerged that could stimulate the fine motor skills of children aged 4-5 years.
- 2) 2) Create indicators that will be targets in the APE assessment of multifunctional blocks in stimulating fine motor skills in children aged 4-5 years
- 3) 3) Looking for some material on fine motor skills for children aged 4-5 years
- 4) Design and create several activities contained in the multifunctional beam APE

After the APE has been created, the APE designed has 5 main activities, namely: installing ropes, wiping, weaving, buttoning and crocheting, then the validation stage is carried out by material experts and media experts. The APE Multifunction Beam image before validation is as follows:

Table 4 APE of Multifunctional Beams Before Validation

No	Information	Picture
1	Activity Installing ropes	
2	Wipe activity	
3	Weaving Activities	
4	Fishing Activity	
5	Meronce Activities	

APE multifunctional blocks are shaped like blocks where on each side there is a different game, namely on the top side there is a string made of blue straw so that it resembles rain, on the left side there is a rope made of flannel which is attached to a rope tied to the owl, The front side is a gray swab that depicts an expression, the back side is weaving made from flannel, and the right side is buttoning the bird's wings made from flannel and attached with buttons. In the development of

APE, multifunctional beams focus on fine motor stimulation. APE Multifunctional Blocks also use colorful colors to attract children's interest when playing with them.

3) *Development*

a. Expert Validationi

1. Material Expert

The initial APE product that had been designed was then consulted with 2 material experts, namely Dr. Ifada Novikasari, M. Pd and Mrs. Dewi Fitriani, M. Ed. The validation results of 2 material experts on APE multifunctional beams are attached in the table below:

Table 5 Material Expert Validation Results

No	Assessment Indicators	Observation value	
		V1	V2
1	The material presented in APE multifunctional blocks is in accordance with the goal to be achieved, namely improving children's fine motor skills.	4	4
2	Suitability of APE Multifunctional Block material to the child's developmental age level (4-5 years)	5	4
3	The material is displayed in an attractive manner	4	5
4	The material presented is useful for skills in everyday life	5	5
5	The material can develop fine motor skills in children aged 4-5 years.	4	4
6	Multifunctional APE beam support to train fine motor skills of children aged 4-5 years.	4	4
7	The material presented is according to the indicators: 1. Weaving side: <ul style="list-style-type: none"> • Coordinate eyes and hands to perform complex movements • Perform manipulative movements to produce a shape. • Coordinate eye and hand movements. 	3	4
	2. Side attaching strap: <ul style="list-style-type: none"> • Coordinate eyes and hands to perform complex movements, • express yourself with works of art 	4	4

	<ul style="list-style-type: none"> • control hand movements that use smooth muscles (twisting) • perform manipulative movements to produce a shape. 		
	3. Wipe side: <ul style="list-style-type: none"> • coordinate eyes and hands to perform complex movements, • express yourself with works of art, • trace the shape • perform manipulative movements to produce a shape • control hand movements using smooth muscles (stroking). 	4	5
	4. Meronce/puzzle side: <ul style="list-style-type: none"> • coordinate eyes and hands to perform complex movements • perform manipulative movements to produce a shape • control hand movements using smooth muscles (jumping) 	4	4
	5. Button Side: <ul style="list-style-type: none"> • perform manipulative movements to • control hand movements that use smooth muscles (picking • coordinate eyes and hands to perform complex movements. 	4	5
8	The relationship between the material displayed is in accordance with the child's real conditions.	4	5
9	The APE presented is in accordance with the characteristics of fine motor development of children aged 4-5 years.	3	5
10	The material provided can motivate children to develop fine motor skills in children aged 4-5 years.	4	4
11	APE multifunctional beam which has 6 sides, 12 ribs and 8 corner points with dimensions of 25 × 35 can provide material that suits the learning objectives of children aged 4-5 years.	4	4
12	shaped blocks that present multifunctional games can complement the characteristics of educational game tools	4	4
Number of Frequencies		16	16

Total score	64	69
Maximum Total Score	80	80
Constant Numbers	100	100
Percentage	80 %	86,25%
Category	very feasible	very feasible

Source: Multifunctional Beam APE Validation Results by Materials Experts

2. Based on the assessment table from material experts who have been assessed, with a total frequency of 16, it was found that the total score from V1 was 64 V2 was 69, with the maximum score being 80, thus obtaining the percentage results of V1: 80% and V2; 86.25%. Based on the results of the comments, it is necessary to further refine the APE multifunctional blocks, namely in terms of playing activities, materials, level of play, suitability of indicators for children's motoric development.

3. Media Expert

The initial multifunctional beam APE product that has been completed is designed and then validated by media experts. The results of media expert validation on APE are attached in the table below

Table 6 Validation Results from APE Experts

No	Observed aspects	Assessment criteria	V1	V2
1	Technical	Multifunctional APE beams can be used for a relatively long period of time	4	4
		APE multifunctional beam is easy to use and easy to lift	4	3
		APE multifunctional blocks are easy for children to understand when playing.	3	4
		APE multifunctional blocks are made from materials that are safe for children.	5	5
2	Aesthetics	APE multifunctional blocks have colors that can attract children's interest	4	3
		The shape of the multifunctional APE block is in harmony with the characteristics of the child	5	5
		Has an attractive appeal through the multifunctional APE beam display	4	3

		APE multifunctional blocks have sizes that are suitable for use by children	5	4
3	Educative	Multifunctional APE block activities are suitable for developing children's fine motor skills	4	4
		The use of multifunctional APE blocks is appropriate to the child's abilities and age stages	5	5
		APE multifunctional blocks can provide more than one activity for children	5	5
4	Material	The material presented in APE multifunctional blocks is in accordance with the learning objectives of children aged 4-5 years	3	4
		Suitability of the material for the use of multifunctional beam APE	5	5
		Able to motivate children to develop fine motor skills	4	5
		Suitability of material to aspects of children's fine motor skills	4	5
		The material presented can provide benefits in children's daily lives	5	3
Total score		69	67	
Total of frequencies		16	16	
Maximum score		80	80	
Percentage		86,25%	83,75%	
Validator		V1	V2	
Categori		Very Worth It	Very Worthy	

Source: Data Processing Results

Based on the APE assessment table by media experts, the percentage obtained was 86.25% and V2: 67 with a total percentage of 83.75%. From these percentage results, it can be concluded that the APE Multifunctional Block is suitable for use for the fine motor development of children aged 4-5 years.

b. Product Revision

1. Material Expert Validation

After the product assessment has been carried out by the material expert through a validation sheet, suggestions and comments have been received from the material expert. The

suggestions and comments during consultation with material experts are explained in the following table :

**Table 7 Comments and Suggestions from Material Experts
 Validator 1: Dr. Ifada Novikasari, M. Pd**

Consultation	Validator Suggestions
first	<ol style="list-style-type: none"> 1. The weaving side is characteristic of children aged 4-5 years in developing fine motor skills, including complex activities. Indikator mengekspresikan diri dengan karya seni, kurang tepat, kembangkan indikator yang tepat terhadap aktifitas memasang tali. 2. Other characteristics need to be brought out in APE activities. Because you can see there are lots of activities involved (buttoning, attaching ropes, weaving). Jika memungkinkan ada kegiatan lain, seperti menulis, memotong 3. The size of the APE needs to be adjusted to the child's physique 4. The color play in APE is made as vibrant as possible



**Tabel 8 Komentar dan Saran dari Ahli Materi
 Validator 2: Dewi Fitriani, M. Pd**















Consultation	Validator Suggestions
first	<ol style="list-style-type: none"> 1. In weaving activities: Each side of APE is developed into 3 activities with different levels, namely: high, medium and low. Each game pattern must be different and use different sizes of weaving rope, namely thin, medium, large. Provide a picture of the pattern in the booklet, there is interval 1, interval 2 of the weaving motif design. Material can be used from flannel. 2. In the activity of installing ropes: the activities designed must be many and varied in installing ropes, if only 1 activity is still not enough, it is better to be full of activities to insert ropes in various ways. Then at the end of the shoelace it is best to use a rope rounder, and the end of the rope should be harder which makes it easier for the child to insert. 3. For dust wiping activities, it is best if the activity can be disassembled, so a place must be provided to store the APE after use. To wipe the dust, choose paper that is plain, hard and laminated. The drawing patterns must be varied, not just 3, for paint tools there must be 1 set, and equipped with a storage tool, which is easy to open and close. 4. In the meronce activity, the game may be omitted, because the activity is very limited, the activity in this APE is not meronce, so it may be replaced with a puzzle.

	<p>Because it's better to use a variety of materials, not just flannel, for puzzles the material can be made from wood. Use 3 play activities from puzzles with 3 different levels, 10 piece puzzles, 9 piece puzzles and 6 piece puzzles.</p> <p>5. For buttoning activities, it is best if the activity can be disassembled, so you must provide a place to store the APE after use, it should be coated with a hard base material. For buttoning activities, use buttons of different sizes (large, medium, small), to stick them, you can use adhesive. or magnets.</p> <p>6. Booklets must be provided as instructions for use in each activity. There must be an explanation of the purpose of APE, instructions and steps for playing must be clear. Each side must correspond to the child's motor development indicators. This booklet makes it easier for teachers to play the game directly.</p> <p>7. The box should be made of wood to make it sturdier. Modify the box with hinges so that it can be opened and closed to become a storage place for game activities.</p> <p>8. The instrument does not yet display fine motor material in APE</p>
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Based on suggestions and comments from material and media experts, the researcher tried to revise the Multifunctional Beam APE product based on the comments of the 4 validators. After product revisions based on material experts and APE, the APE multifunctional beam has 5 sides; namely the weaving, buttoning, wiping, attaching ropes and puzzles, with each side providing 3 play activities with different levels. The following are details of the APE before and after revision from material and media experts:

Table 9 APE of Multifunctional Beams Before and After Revision

Before	After	Information
		<p>The initial multifunctional beam APE product did not match the name of the APE that would be developed. The validator suggests revising the APE in terms of size and materials. Then the shape of the beam was revised with dimensions of 25x25x39 cm and made of wood, to make it sturdier.</p>

<p>Weaving Activities</p> 		<p>The initial weaving product was not suitable for the development of children's fine motor skills, it only had 1 play activity and according to the validator it was still lacking. Then each side of the weaving was revised, each of which was developed into 3 activities with different levels.</p>
<p>blurry swab activity</p> 		<p>The initial product used to use small-sized drawings and did not come with a closed colored pencil storage container. So it will make the colored pencils scatter when stored. The validator suggested that the image be made in a larger size, use thicker paper, and a colored pencil storage box.</p>
<p>Buttoning activity</p> 	  	<p>The initial buttoning product only consisted of 1 activity, the validator suggested adding another activity and it was easy to disassemble, then revisions were made so that the designed activity could be disassembled, it had been covered with a hard base material, namely cardboard and lined with flannel. In buttoning activities, buttons of different sizes (large, medium, small) are used.</p>
<p>Rope installation activity</p> 	  	<p>The initial product for attaching a rope only consisted of one activity and very little, the validator suggested adding more activities, which were adjusted to the level of difficulty based on large, medium and small holes. And made to disassemble.</p>
<p>Puzzle</p> 	  	<p>The initial product is a marketing activity. The validator suggested that the meronce activity be replaced with a puzzle made with 3 levels of difficulty, namely an 8-piece, 9-piece and 11-piece puzzle.</p>

4) *Implementation*

The implementation stage is a continuation of the development stage. This stage aims to realize the design after product development, to see the feasibility and practicality of the product. After

the product revision was complete, the researchers conducted limited trials on children aged 4-5 years at the Istiqamatuddin Nurul Muarif Primary School, Kec. Mila Pidie at Kindergarten A with 15 children on May 17th 2022 until May 20th 2022. At this trial stage, children are asked to try Multifunction Cuboid product. Then, giving an assessment when children use the product is to use an observation sheet assessment to see the fine motor development of children aged 4-5 years. The purpose of the assessment is to see the feasibility of using APE in learning. Following are the assessment results on the observation sheet.

Table 10 Results of Assessment of Children's Fine Motor Development Observation Sheet Using Multifunctional APE Beam

No.	Child Assessment Criteri	Value					Total Score
		1	2	3	4	5	
1	Children are able to coordinate eye and hand movements <ul style="list-style-type: none"> • Weaving level 1 • Weaving level 2 • Weaving level 3 • Attach a rope to the bee • Attach the string to the butterfly • Attach the laces to the shoes • Wipe away 1 • Wipe away 2 • Wipe away dirt 3 • Playing a 9 piece Puzzle • Playing a 10 piece puzzle • Playing an 11 piece puzzle • Finger buttoning • Woring clothes • Buttoning peacock feathers 	0	0	0	0	1 5	75
2	Children are able to express themselves through works of art using APE Multifunctional beams Anak mampu memadukan warna pada kegiatan usap abur <ul style="list-style-type: none"> • Children are able to make various shapes of webbing • Children are able to attach various types of rope to the holes provided 	0	0	0	0	1 5	75
3	Children are able to trace forms of expression using the blurring technique on the multifunctional APE block	0	0	1 2	3	0	48

4	Children are able to control hand movements such as: <ul style="list-style-type: none"> • stroking using smooth muscles through rubbing activities • pick up using smooth muscles when putting together puzzle pieces. • pick up using smooth muscles when attaching the rope • pick up using smooth muscles when cocking • pinch using smooth muscles when placing buttons in each hole. • Make webbing based on patterns 	0	1	14	0	0	44
5	Carrying out manipulative movements to produce a shape using various media. Children are able to disassemble and reassemble puzzle pieces into a complete picture. <ul style="list-style-type: none"> • Children are able to make woven motifs • Children are able to create rope installation patterns 	0	0	0	9	6	66
Total Score from validators							308
number of questions							5
total Likert scale score							25
The ideal total score							375
Percentage							82,13%
Criteria							Very feasible

Sumber: Hasil Pengolahan Data

Based on the table above, the average result of child assessment observations obtained based on small-scale trials is 82.13% which is in the very feasible category.

5) *Evaluation*

At the evaluation stage, the researchers revised the product improvements based on the results of observations during the implementation of the multifunctional APE beam. The suggestions and input that the researchers received were aimed at getting a final product that could be developed that was perfect and of good quality so that by using the multifunctional APE block it was hoped that it could stimulate the fine motor skills of children aged 4-5 years.

Discussion

This research is research that produces a product in the form of a multifunctional APE block to stimulate children's fine motor skills. This research uses R&D (Research & Development) development with 5 stages, namely 1 (Analysis), which is used to analyze problems encountered at school. At this stage, analysis is carried out in accordance with the needs and characteristics of the child. After analyzing it, it was discovered that there was a lack of variation in APE when stimulating children's fine motor skills. stage 2 (Design), namely the design stage of the multifunctional beam APE. Stage 3 (Development) is the development stage which is carried out by validation using validation sheets from APE experts and material experts (validators). Stage 4 (Implementation) is conducting direct trials on children aged 4-5 years, assessment using child observation sheets filled in by the class teacher. Finally, stage 5 (Evaluation) is the final product in the form of a multifunctional APE to stimulate children's fine motor skills based on the five stages above.

Feasibility of Multifunctional Cuboid APE

The multifunctional APE beam has been checked and validated for its suitability by APE experts, 2 material experts and 2 media experts. If it is felt that the APE is not yet or is not suitable for use, the expert validator will provide comments and input for improvements in the design of the multifunction cuboid APE. On the validation sheet, the four validators provided several inputs for improvement. Based on this input, revisions were made to the multifunctional beam APE. The revisions include: (1) The validator suggests changing the images in the wipe the blur game from animal images to expression images because they are in accordance with the indicators that want to be developed. (2) The initial multifunctional beam APE product does not match the name of the APE to be developed. The validator suggests revising the APE in terms of form. Initially, it was in the form of a cuboid and then revised into other measurement of 25X35 cm.

1. Practicality of APE Multifunctional Cuboid Stimulating Fine Motor Skills in Children Aged 4-5 Years

The practicality of developing multifunctional APE blocks to stimulate fine motor skills in children aged 4-5 years can be determined based on trials on children at school as well as data analysis through child observation sheets regarding children's achievements using multifunctional APE blocks. This sheet is a question sheet composed of five questions which are filled in by the class teacher. The teacher's response when children play using multifunctional APE blocks is very

appropriate and supportive. The teacher stated that children really like playing while learning using multifunctional APE blocks because they can stimulate children's fine motor skills optimally, even with the multifunctional APE blocks, the stages of development of children's fine motor skills can develop according to the child's age. Based on the results of the practicality assessment from the teacher's response observation sheet after testing the APE multifunctional beam with children, the overall percentage obtained was 82.13%. So it meets the assessment criteria in the very practical category. So it can be stated that the results of the development of multifunctional APE blocks to stimulate fine motor skills in children aged 4-5 years are very practical to use. This is in accordance with the explanation regarding the benefits of weaving activities, namely that weaving activities can improve children's fine motor skills related to the movement skills of both hands. Apart from that, with the activity, children can also improve their eye and body coordination skills, as well as being able to move body parts related to the movement of their fingers.²⁰

CONCLUSION

Based on the results of research and discussion on the development of multifunctional APE block products to develop children's fine motor skills, it can be concluded as follows: The APE product developed is APE. It has been developed to be more interesting, while the learning process in class is more fun and not boring. The APE development was developed using research and development research with the ADDIE development model, that is: *analysis*, Analyze children's problems and needs. *Design*, product manufacturing steps. *Development*, APE development with validation from material experts and media experts as well as product revisions based on suggestions and input from each expert. *Implementation*, namely trial use of the product by assessing the observation sheet on the child's fine motoric development. *Evaluation*, is the final product developed based on a feasibility assessment on APE quality. APE development aims to develop children's fine motor skills based on the results of assessments from each expert. Validation results from material experts obtained results of V1: 80% and V2: 86.25% in the very feasible category. Then for APE experts, the results obtained were V1: 86.25% and V2: 83.75% which were in the very feasible category. As for the results of the observation sheet on children's fine motoric development, with a total of 5 questions for one child multiplied by 15, to obtain a

²⁰ Eka Setia Endayanti, *Meningkatkan Kemampuan Motorik Halus Melalui Kegiatan Meronce pada Anak Kelompok Bermain Mesjid Syuhada*, (Yogyakarta: Universitas Negeri Yogyakarta, 2017), hal, 35

result of 82.13% which is in the very feasible category. The novelty of the product developed by APE, the multifunctional beam, was developed based on different activities and levels, is durable, and is equipped with a storage box. Limitations on bulrry swap activities which only use paper. Suggestions for future researchers to develop products that are durable and can be used repeatedly.

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