

DEVELOPMENT OF SMART GIFT EDUCATIONAL GAME TOOLS TO IMPROVE THE CALCULATING ABILITY OF GROUP B CHILDREN IN RA AL-AMIN TAMACINNA, GOWA DISTRICT

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Abstract. This development research aims to: (1) find out the process of developing a smart gift educational game tool and assess the level of validity, practicality, and effectiveness of the smart gift educational game tool to improve the numeracy skills of group B children at RA Al-Amin Tamacinna, Gowa Regency. This type of research uses the ADDIE research and development (R&D) model (Analysis, Design, Development, Implementation, and Evaluation). Based on the results of the product assessment of the validator experts, the overall average value is 87.25% with a very valid category. On the practicality sheet, a score of 98% is obtained with very practical criteria and on the pretest questionnaire sheet, the average pretest score is 49%, which is in the less effective criteria, and the average posttest score is 91.6%, which is in the very effective criteria, for 8 students. From the results of this assessment it can be concluded that the development of a smart gift educational game tool to improve group B numeracy skills at RA Al-Amin Tamacinna, Gowa Regency has met the valid, practical, and effective criteria to use.

Keywords: APE Smart Gift, Numeracy Power

INTRODUCTION

In essence, early childhood education is education that is carried out in an institution with the aim that a child will receive education that is useful in the growth and development of children from an early age. In Law no. 20 of 2003 related to the National education system explained that the early childhood education unit is a coaching effort given to children aged 0-6 years in providing educational stimulation to help physical and spiritual growth and development so that children are ready to continue their education (Depdiknas, 2009).

Early childhood is in the first five years which is called the Golden age or the golden age (Laode, 2020). These periods are critical periods where a child needs the right stimuli to reach perfect maturity (Rahmadani, 2020). To get the right stimulation, we need an institution that can help stimulate children's development. Early childhood education programs are aimed at early childhood with the aim of having readiness in the educational process at the next level. The readiness in question is the readiness of a child to acquire appropriate knowledge and skills from the child's world.

The world of children is the world of play. Playing is an activity carried out by children which becomes a necessity for children when they are with their friends wherever the child is. Through playing it can stimulate the senses, so that the muscles are coordinated and the child gains new skills (Zahratul, 2020). Playing is an activity that is beneficial for children, by playing children will gain knowledge and aspects of development that exist in children will be stimulated.

Playing has many benefits, children learn and know many things, starting from knowing the rules, being able to interact with other people, cooperation and discipline and being able to explore and increase their imagination power in the games given to children. From playing all aspects of child development can be stimulated, one of which is cognitive development. Cognitive development is a fundamental process of thinking, remembering and critical thinking. According to the Minister of

Education and Culture Number 137 of 2014 regarding Standards for Child Development Achievement Levels (STPPA) in the scope of cognitive development, it consists of several parts, namely (1) learning and problem solving, (2) logical thinking, and (3) symbolic thinking. At the stage of symbolic thinking, children aged 5-6 years include, mentioning number symbols 1-10, using number symbols to count, matching numbers with number symbols, getting to know various kinds of vowel and consonant symbols, and presenting various kinds of objects in the form of pictures or writing (Permendikbud Number 137 of 2014).

Cognitive development is very important to enable children to explore the world around them by using their five senses in this case counting activities. In the Al-Quran Surah Yunus/10:5 Allah SWT, has explained the command for humans to learn to count. Because by having the ability to count, we know the calculation of the year and time, so we know the journey of the sun and moon. In addition to calculating time, in the Al-Quran there are also things that use arithmetic ability to solve things in life. Therefore, the ability to count is very necessary and useful in human life.

Ability is a skill possessed by an individual from birth and if it continues to be stimulated properly then that ability will continue to develop. While counting is a skill that can be mastered by children to solve problems that will be encountered in everyday life. Counting is a skill that can be mastered by children to solve problems that will be encountered in everyday life. Skill means the child can also count objects, add and subtract. Every child has the ability to count to develop his skills, the characteristics of his development start from his immediate environment in accordance with his development which can increase the level of understanding regarding addition and subtraction (Ahmad Susanto, 2014). Skill means the child can also count objects, add and subtract. Every child has the ability to count to develop his skills, the characteristics of his development starting from his immediate environment in accordance with his development which can increase the level of understanding regarding addition and subtraction. Counting is the initial basis of mathematics which should be introduced to children from an early age using concrete material or media (Wulansari Vitaloka, 2020). Counting activities such as simple counting, sorting, adding and subtracting numbers (Desi Mulyani, et al, 2020).

Various kinds of educational game tools that can improve children's numeracy skills. Educational game tools are game tools that can entertain and educate. According to Piaget's view, games are media that can optimize children's cognitive development. For example, if there are children who are just learning to add or subtract, they start by playing with easy numbers and do different things, and if they finish well, they laugh and feel proud (Hadijah, 2012). Counting using educational game tools is expected that children are not only intelligent in terms of aspects of cognitive development but all aspects can be fulfilled (Indri Yani, 2021). By using educational game tools, children are indirectly learning but through playing activities.

Based on the results of initial observations conducted by researchers at RA Al-Amin Tamacinna, Maradekaya Village, Bajeng District, Gowa Regency, researchers found several problems. When the teacher invites students to say the numbers 1-10, some children are already able to sort the numbers and say them but there are also children who still have difficulty pronouncing and ordering the numbers 1-10, and the child's pronunciation in mentioning the numbers is also not right with the number of counts. . Lack of variation in the learning process, the media used to introduce numbers to children is less attractive. The media used are only posters, numbers and sticks.

This condition is due to the learning process in class, the teacher explains with the help of picture media then uses the children's worksheets (LKA) and the magazines given by the children. Even though the teacher gives an example on the blackboard, the children imitate it in their notebooks so that it is difficult for children to understand and write numbers. Besides that, the lack of use of concrete media in the learning process, so that children are less focused and focused elsewhere. In research (Elfia Bestharia, 2022) explains that in the introduction of numbers to children, concrete media are needed which are fun. Therefore, it is necessary to have educational game tools to improve children's numeracy skills by utilizing used goods, which are designed in such a way that children are able to say, sort numbers 1-10, and operate addition and subtraction properly and correctly. One of the interesting and fun educational game tools that utilize used goods is smart gifts. Smart gift is a game tool that uses cardboard to make educational game tools that can improve children's numeracy skills. In this gift there are also several sides where each side has a different game in counting activities, namely clock numbers, sorting numbers, matching numbers, finger counting and hand punch. In contrast to previous studies, some have used apron media,

number smart boards, number puzzles, and many more which are used to introduce numbers to children which can improve children's numeracy skills and in this study the researchers developed an educational game tool called a smart gift.

The formulation of the problem in this study are: 1) what is the process of developing smart gift educational game tools to improve the numeracy skills of group B children at RA Al-Amin Tamacinna Gowa Regency, 2) what is the level of validity, practicality, and effectiveness of smart gift educational game tools for improve the numeracy skills of group B children at RA Al-Amin Tamacinna, Gowa Regency. The purpose of this study was to look at the development process and the level of validity, practicality, and effectiveness of smart gift educational games to improve the numeracy skills of group B children at RA Al-Amin Tamacinna, Gowa Regency.

RESEARCH METHOD

This type of research is research and development (R&D). Research and development is a type of research that produces certain products and tests the feasibility, practicality and effectiveness of a product (Rafiqah, 2013). The research procedure leads to the ADDIE development research model, namely analysis, design, development, implementation, and evaluation.

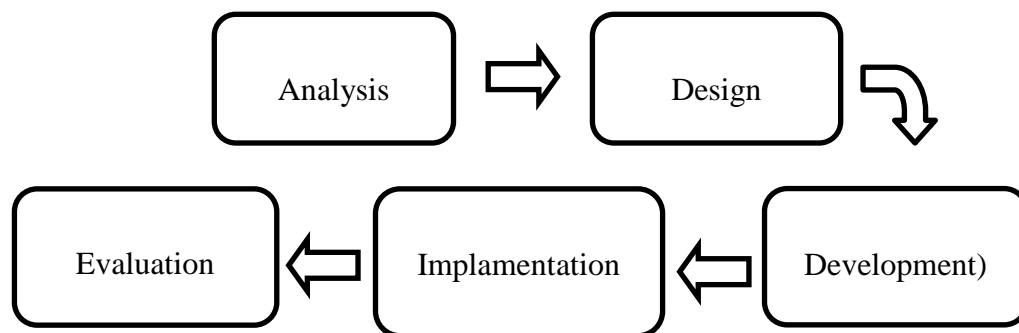


Fig. 1. Smart gift APE Research and Development Procedure

The first stage in this research is the analysis stage. This analysis stage was carried out to analyze the characteristics of the children and analyze the curriculum used. The second stage is design. At this stage, an educational game tool media is designed to be developed, starting from the selection of media materials, media colors, media appearance and others. The third stage is development. This stage is the stage of applying what has been designed and designed and then validating the products that have been made to the validators so as to produce an educational game tool so that it is ready to be tested. After being validated, the next stage is implementation. At this stage, a product trial was carried out for a smart gift educational game tool which would be tested on group B early childhood children at RA Al-Amin Tamacinna, Gowa Regency. The last stage is the evaluation stage, this stage is the process of assessing whether the smart gift educational game tool that has been developed is successful and in line with initial expectations or not. The research instruments used were APE smart gift validation sheet, APE smart gift practicality sheet, and APE smart gift effectiveness sheet. The data collection techniques are observation, observation sheets, and documentation. Data analysis techniques use validity data analysis, practicality data analysis, and effectiveness data analysis.

RESULT AND ANALYSIS

The development model that researchers use is the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). The first stage of the ADDIE development model is the Analysis stage. This analysis phase consists of an analysis of the characteristics of the child and an analysis of the curriculum. Characteristics analysis was carried out to see the character in each child so that the development of smart gift educational game tools can be adapted to the child's abilities and the results of this analysis are that children have different characteristics. There are children who get bored easily, their focus is easily distracted, there are also children who are quiet, actively ask questions and there are children who want to keep playing. The curriculum used

at RA Al-Amin Tamacinna uses the 2013 curriculum. The purpose of this curriculum analysis is to match the media developed with the school curriculum. In setting learning objectives, indicators of learning implementation are used as a comparison.

The second stage is the design stage. At this stage the researcher designed a smart gift APE which will be developed starting from the selection of media materials, media colors, media appearance, media size images that suit the characteristics of early childhood. In line with research conducted by (Virda Mirantika, 2020) which explains that educational game tools used as learning media must meet several requirements, including simple designs, using quality materials, safe, versatile, and attractive for children. Smart gifts are shaped like boxes made of used cardboard which contain several sides, each side of which has a game inside, namely clock numbers, sorting numbers, matching numbers, counting fingers, and hand punch. The games in APE are interrelated smart gifts that can attract children's attention and enthusiasm for learning.

The development stage is the initial stage of developing APE smart gift media and validated by experts, the aim is to get input, criticism, and suggestions for APE smart gift media as well as improvements and improvements to the developed APE. The following is a picture of a smart gift educational game tool.



Fig. 2 Outer Frame



Fig. 3 Inner Frame



Fig. 4 Number Clock



Fig. 5 Sort Numbers

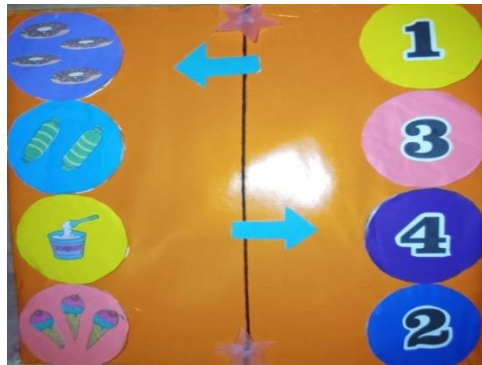


Fig. 6 Number Matching



Fig. 7 Counting Fingers



Fig. 8 Hand Punch

After making the smart gift educational game tool, at this development stage it also aims to validate the smart gift APE that has been made to determine whether it is feasible or not to be implemented to students. Validation was carried out to experts, namely media experts, material experts, and teachers as practitioners. Assessment is carried out by filling out a questionnaire and ticking the aspects to be assessed and providing suggestions from APE that has been developed, namely smart gifts. The following is a list of expert validators and the results of the first stage product validation by the three experts, namely as follows:

Table. 1 List of Expert Validators

No	Validator	Expert Field	Instituon
1	Dr. Hj. Ulfiani Rahman, M.Si.	Media Expert	UIN Alauddin Makassar
2	Sitti Supiyati, S.Pd., M.Pd.	Material Expert	UIN Alauddin Makassar
3	Muliati, S.Pd.	Expert Practitioner	RA Al-Amin Tamacinna

Table 2. The results of the first stage validation

Validator	Category	Presentation
Media Expert	Valid	75 %
Material Expert	Valid	73 %
Expert Practitioner	Very Valid	92%
Average	Very Valid	80%

Based on the table above, it can be concluded that all of the initial smart gift APE products got good scores from several validators with an average percentage score of 80% and were in the very valid category. So with the results of the first validation from several experts, the smart gift APE must be repaired again for parts that are not suitable or not suitable for use in early childhood numeracy learning. The results of the second stage of product validation by the three experts are as follows:

Table 3. Results of the second stage of validation

Validator	Category	Presentation
Media Expert	Very valid	92,5%
Material Expert	Very valid	82%
Expert Practitioner	Very valid	98%
Average	Very valid	90,8%

Based on the table above, it can be concluded that from the first stage of validation there were improvements and then a revision was carried out and re-validated in this second stage. In the second stage, this smart gift APE gets a very good score with a percentage score of 90.8%. Through each stage carried out by all experts and APE, this smart gift deserves to be tested with improvements and suggestions in learning for early childhood, especially for those in group B. The implementation stage was carried out by means of product trials before and after using the smart gift APE media for 8 students.



Fig. 9 Implementation of smart gift educational game tools at RA Al-Amin Tamacinna

In the analysis of effectiveness seen from the results of the pretest and posttest. The results of the product trials that were carried out on group B, which consisted of 8 children at RA Al-Amin Tamacinna in the pretest and posttest activities, can be seen in the table below:

Table 4. Presentation of Pretest and Posttest Results

Product	Pretest	Posttest	Enhancement
Smart Gift Educational Game Tool Development	49%	91,6%	42,6%

Based on the description above, before applying the smart gift educational game tool at RA Al-Amin Tamacinna, Gowa Regency, the score obtained was 49%, which was in the less effective category and after being applied, the score obtained was 91.6%. It can be seen that each stage has increased even though there are some children who are still in the expected development category. Children's numeracy abilities vary, there are children who are very fluent in saying numbers 1-10 and there are those who still pronounce them backwards and forwards. In line with research conducted by (Besta Palmin, 2021) explains that counting activities in early childhood are carried out in a fun way so that children can easily understand and recognize the concept of numbers by providing an educational game tool because a pleasant counting experience can be created in the child's memory. Therefore the researchers created an educational game tool called a smart gift. After the APE smart gift was implemented to group B students at RA Al-Ami Tamacina, which totaled 8 people, the results of the posttest obtained a score of 91.6% in the very effective category..

In research, Besta Palmin explained that using concrete objects as a means of developing numeracy skills can help children learn well and involve all of the child's senses, so it is evident from the results of trials that children's numeracy skills have increased. In addition, the use of APE smart gift media makes it easier for children to recognize numbers, match numbers with pictures, sort numbers, and perform addition and subtraction operations. This smart gift APE media is also concrete and fun in nature so that children feel happy. In line with research conducted by (Astini, Nurhasanah, and Rachmayani, 2019) explains that educational game tools are specifically designed to support the implementation of effective and fun learning, as well as a means of stimulating activities in learning without children realizing it and designed in a multipurpose manner.

Piaget's view of children's learning that the environment is very influential on children's learning, if schools apply the concept of constructivism in the teaching and learning process, children will imitate optimally with directions from educators (Chafiyah, Muhtarom, Anita Chandra Dewi, 2022). In constructivist learning theory, learning is a process of forming (constructing) knowledge by the students themselves. According to (Schunk, 1986) knowledge is in the child who is knowing. The point is that the process of forming knowledge of students is carried out by themselves. Students must be active in learning, think actively, create concepts and interpret the

things they are learning. In constructivist learning theory, the teacher's role is to help encourage the smooth process of forming students' knowledge. The teacher does not give knowledge, but by accompanying students, the knowledge will be formed by itself so that students understand their mindset in learning.

The next stage is the evaluation stage. At this stage, an evaluation of both data was carried out in the form of suggestions given by media experts and material experts as well as posttest and pretest observation sheets for children from the implementation stage which were used to determine the increase in children's numeracy skills. Based on the results obtained, the development of a smart gift educational game tool to improve the numeracy skills of group B early childhood at RA Al-Amin Tamacinna, Gowa Regency was declared valid, practical and effective to use.

CONCLUSION

Based on the result of the research and discussion, the researcher can draw the following conclusions: (1) the process of developing a smart gift educational game tool using the ADDIE development model consists of 5 stages, namely analysis, design, development, implementation and evaluation. (2) The smart gift educational game tool meets the valid, practical, and effective criteria. Valid criteria can be seen from the validation results of smart gift educational game tools that meet valid criteria. Practical criteria are obtained from the results of practicality assessments carried out by practitioners, where the results on the practicality questionnaire sheet meet the very practical category. Effective criteria can be seen from the results of the second test (posttest) there is an increase in children's numeracy skills, namely the average pretest score of 49% is in the less effective criteria and the average posttest score is 91.6 which is in the very effective criteria. Thus, the purpose of developing a smart gift educational game tool has met the valid, practical, and effective criteria and can be implemented for students and can be used as a teacher as an additional media in the learning process at RA Al-Amin Tamacinna, Gowa Regency.

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