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The Development of Math Learning Tools for Elementary Based on 2013 Curriculum in Coastal Area

Zuhri D, Maimunah, Putri Yuanita

Department of Mathematics Education, Universitas of Riau, Pekanbaru, 28293, Indonesia

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ABSTRACT

K13 has not been implemented optimally, one of them is caused by the inability to develop learning tools that apply the scientific approach. Student-environment contexts rich in learning resources can not be utilized by teachers. This condition encourages us to conduct a study in developing K13-based elementary school educational devices by utilizing coastal area contexts. Learning tools developed are lesson plans, learning media and teaching materials. The purpose of this study is to produce lesson plans, learning media and teaching materials that are scientifically designed coastal areas are valid so feasible to use. In the development of these learning tools, the researcher uses a 4-D framework model. The research data was collected using a validated questionnaire. Validation results indicate that: (1) the validity test of lesson plans are in a very valid category; (2) validity test of valid category media; and (3) the validity test of the teaching materials is in a very valid category.

1. Introduction

The implementation of K13 from 2013 until now is still experiencing ups and downs and according to the educational curriculum, K13 is the curriculum that receives the most attention. Based on the results of research related to the implementation of K13, the main factors that constrain the implementation of K13 are the lack of teacher understanding of three things, those are: the assessment system, thematic learning, and the scientific approach (Faridah, 2014; Maisyaroh, et al. 2014; Agnes, 2014).

The scientific approach is the main approach in K13 basically in line with the concept of learning mathematics. This means that mathematical knowledge is

* Corresponding author. Tel./Fax.: +6281371594049
E-mail: zuhri@lecturer.com.id

very appropriate to be built with a scientific approach because mathematics in particular at the elementary level is very close to student life. This is where the inability of the teacher begins in applying thematic learning with a scientific approach as the main approach in K13. The teacher does not have sufficient abilities and skills in developing scientific learning tools by following the characteristics of the environment. As a result of this condition, teachers generally use existing textbooks, even though the context contained in the book is not by following the characteristics of their environment (not scientifically based on student environment). A simple example, in adding $2 + 3$; in the text book shown are two cars plus 3 cars. This illustration is not scientific for the coastal area, the illustration should be two canoes ships plus three canoes ships.

Departing from the need for learning tools that are in line with the K13 approach, we try to develop them through a study. Learning tools are tools used in learning, so before they are used they must be validated first. In this connection, the research problem that is the subject of the study is how the validity of the devices being developed.

Related to learning tools, based on several studies related to learning device boundaries, such as the National Center for Competency Based-Training, it can be concluded that the learning kit is a set of learning tools that are utilized in learning activities. From some of the explanations above, it can be understood that learning tools are all materials (both information, tools, and texts) that are used to support learning activities, such as syllabus, lesson plans, teaching materials modules, media, learning plans, worksheets, audio teaching materials learning media and so on.

Earning lesson plans is a guide for a teacher in implementing the learning process. The components of the lesson plan include: (1) school identity; (2) subject identity; (3) class / semester; (4) subject matter; (5) time allocation; (6) learning objectives; (7) basic competencies and indicators of competency achievement; (8) learning material; (9) learning methods; (10) learning media; (11) learning resources; (12) learning steps; and (13) assessment of learning outcomes.

Talking about the management of mathematics learning in elementary schools, we cannot be separated from the characteristics of students, and the objects of mathematics that are studied abstractly. This situation requires the teacher to be skilled in manipulating abstract mathematical objects so that they are easily understood by students. This statement shows that mathematics learning media in this case, is a mathematical teaching aid that has an important meaning in learning mathematics, especially at the beginning of the introduction or inculcation of facts, concepts and principles of mathematics as elementary school level. Understanding this, it is necessary to develop a prototype of the media /teaching aids and guide their use so that teachers can develop them according to the environment in which they teach and the skills to use them (Suanto et al., 2017).

Learning Implementation Plan is a guide for a teacher in implementing the learning process. The components of the lesson plan include: (1) school identity;

(2) subject identity; (3) class / semester; (4) subject matter; (5) time allocation; (6) learning objectives; (7) basic competencies and indicators of competency achievement; (8) learning material; (9) learning methods; (10) learning media; (11) learning resources; (12) learning steps; and (13) assessment of learning outcomes.

Speaking of managing mathematics learning in elementary schools, we cannot be separated from the characteristics of students, and the objects of mathematics that are studied abstractly. This situation requires the teacher to be skilled in manipulating abstract mathematical objects so that they are easily understood by students. This statement shows that mathematics learning media in this case is a mathematical teaching aid that has an important meaning in learning mathematics, especially at the beginning of the introduction or inculcation of facts, concepts and principles of mathematics as elementary school level. Understanding this, it is necessary to develop a prototype of the media or teaching aids and guide their use so that teachers can develop them according to the environment in which they teach and the skills to use them (Siagian et al., 2018).

The word, "media" is the plural form of "medium", which comes from the Latin "medius", which means "middle". In Indonesian, the word "medium" can be interpreted as "between" or "medium". So the notion of media tends to mean delivering or forwarding information (messages) from information sources (message providers) to the recipient of the message or information. This understanding means the same as the statement expressed in the AECT Task Force (1977) that is the media are all forms and channels that can be used in a process of presenting the information. Aids or teaching aids in their use still require humans (teachers) to convey messages or information by following the learning objectives while learning media can be used independently because it includes messages or contains information by following specified learning objectives without having to involve humans (teachers) again. In other words, aids are part of the learning media. Roza et al. (2018) suggests that teaching aids are learning media that contain or carry the characteristics of the concepts being studied.

Based on the limitation of teaching aids above, it can be said that the teaching aids are a tool used to minimize the verbliness of concepts, facts or principles learned so that they are clearer and in their use still use human intervention (teacher). The application of learning through a scientific approach requires the teacher to be creative in developing teaching materials so that as far as possible the context for students is appropriate to their environment.

Referring to the statement above, teaching materials can be abstracted that teaching materials are a set of teaching material /substance (teaching material) that are arranged systematically, showing a complete figure of the competencies that students will master in learning activities. The availability of teaching materials that are by following the learning needs and are interesting for students (contextual) will facilitate students to be faster in achieving the specified competencies.

For the learning tool produced to function properly, it means that it can be used as a good learning tool, so it must have good validity. Validity comes from the word validity which means the extent to which the accuracy and accuracy of a measuring instrument in carrying out its measurement function. It was further stated that a measure that shows the validity of an instrument.

From some of the explanations above, the researcher concludes that validity is the level of validity or validity that will be measured. In connection with that, so in this research to obtain the validity of the developed device it is necessary to do a test called the validity test.

Nugraheni (2014) argues that there are 3 ways of testing validity, namely: (1) Testing the validity of construction, this test is carried out using the opinion of experts (judgment expert); (2) Testing the validity of the content, this test is carried out by comparing the contents of the instrument with the subject matter that has been taught; (3) Testing external validity, this test is done by comparing the existing criteria on the instrument with empirical facts that occur in the field. In developing this media, the validity test conducted is the construction validity test using the opinion of experts (judgment expert).

2. Methodology

This research belongs to the development research, which used a 4-D framework model consisting of the stages of defining, designing, developing, and disseminating. The selection of this model was based on the simplicity of this model so that it is easy to apply. Referring to the problems raised, the research subject used as a place of trial was SDN 012 Sungai Apit, Siak, Riau. The selected school was seen as meeting the characteristics of the coastal area which is the object of research. The research data were collected by validator evaluation of the developed device. In connection with that, the source of this research data was the validator assessment collected through a questionnaire derived from the validator. The validation sheet of the learning kit used a Likert scale consisting of four alternative answers, namely 1, 2, 3, and 4 which respectively declare very inappropriate, not appropriate, appropriate, and very appropriate. The assessment aspects used to measure the validity of the devices developed are successively included in the Table 1.

Table. 1 Assesment Aspect Of Learning Tools

Item	Validation Aspect
Lesson Plan	<ol style="list-style-type: none"> 1. Contains the complete lesson plan identity 2. KI, KD, Indicators, and Learning Objectives have a unified whole (related to both) 3. Contains stages of learning that are by following K13
Learning media	<ol style="list-style-type: none"> 1. By following the concept described 2. By following the curriculum 3. Attractive shapes and colors 4. Easy to use (includes clear instructions)

Teaching materials	<ol style="list-style-type: none"> 1. By following Thematic and Scientific Curriculum (K13) 2. By following the concept described 3. Structured steps 4. Readability
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The data collected was used to describe the validity of the device being developed. Accordingly, the data collected were analyzed using descriptive statistics with formulas such as the following (adapted from Anas Sudijono, 2011):

$$\bar{M}_v = \frac{\sum_{i=1}^n \bar{V}_i}{n}$$

Information:

\bar{M}_v : average total validation

\bar{V}_i : average validation of the i-th validator

n : number of validators

Determination of the range can be known through the highest score minus the lowest score divided by many intervals. Because the range is equal to 3 and there are many intervals of 4, the length of the interval is equal to 0.75. Accordingly, the learning device validation criteria are based on the intervals in Table 2.

Table 2. The Validity Category of Learning tools

Intervals	Category
$3,25 \leq \bar{x} \leq 4$	Very Valid
$2,50 \leq \bar{x} < 3,25$	Valid
$1,75 \leq \bar{x} < 2,50$	Less Valid
$1,00 \leq \bar{x} < 1,75$	Invalid

3. Results and Discussion

Results of Development of Learning Tools

Define

The results of research related to lesson plans, learning media and teaching materials based on the stages of research activities. Based on the results of the assessment of previous research results, it obtained the fact that: (1) the weakness of the implementation of K13 in the field is the weak ability of teachers to develop scientific learning tools by following the student environment; (2) teaching materials in student books are generally not in line with the student environment so the science needs to be built by following their respective environments, (3) the learning media used by teachers are not in line with the material designs contained in the teacher's book, for example in student books a design that shows number 3 is that there are many students in a collection of three people, it should be the media used to show the number three, for example three fish, three canoes, three shells and other types of fish.

User Analysis

(a) Teacher Analysis

Teacher analysis related to the development of this learning device is the difficulty of teachers in developing learning devices. Based on the results of previous searches that the difficulty of teachers in developing learning devices is to choose scientific contexts and develop learning media.

(b) Student Analysis

This student analysis aims to develop teaching materials and media by following the stages of student development. In general, for children the age of elementary school students in class I the stage of intellectual development is at a concrete stage. In this connection, in the development of teaching materials and learning media developed, real contexts are used by following the nature of students, namely the coastal area.

(c) Task Analysis

Task analysis refers to what cognitive tasks students must have regarding learning. In connection with this, given the limitations of research capabilities, the KD raised in the development of this tool is the Theme of Me and My Friend, Basic Competency 3.1 Explains the meaning of count numbers up to 99 as many members of a collection of objects, and Basic Competencies 4.1 Presents count numbers up to 99 which corresponds to the many members of the set of objects presented. Basic Competence 4.2 Write a symbol of numbers up to two numbers that represent many objects in a collection with the idea of place values. The description of learning objectives that become tasks in learning, as contained in Table 3.

Tabel. 3 Learning Tasks

Theme/Sub Theme : My Self/My Body
<p>KD.3.1 Explain the meaning of count numbers up to 99 as many members of a collection of objects</p> <p>Task Analysis :</p> <ol style="list-style-type: none"> 1. Be able to mention 1 to 10 2. Be able to mention the symbol of numbers by following the designated numbers 3. Can declare many members of a collection of objects with the right number (1 to 10) (given after recognizing the symbol number) <p>KD.4.1 Presents a count number with 99 that corresponds to many members</p> <p>Task Analysis :</p> <ol style="list-style-type: none"> 1. Be able to identify numbers 1 to 10 2. be able to group objects according to the given number (1 to 10) <p>KD.3.2 Explain numbers of up to two numbers and the value of the place where the symbols are formed using a collection of concrete objects and how to read them</p> <p>Task Analysis:</p> <ol style="list-style-type: none"> 1. Be able to read the names of numbers 1 to 10 <p>KD. 4.2 Write a symbol of numbers up to two numbers that state many members of a collection of objects with the idea of place values</p> <p>Task Analysis:</p> <ol style="list-style-type: none"> 1. Be able to read numbers (1 to 10) according to many members of a given collection of objects 2. Be able to write numbers (1 to 10) by following many members of the given object collection.

<p>Theme/Sub Theme : Myself/I take care of myself</p> <p>KD. 3.3 Compare two numbers to two numbers using a collection of objects</p> <p>Task Analysis:</p> <ol style="list-style-type: none"> 1. Be able to express a lot of two objects with more, less or equal terms. (1 to 10) 2. States two numbers with terms greater than, less than, or equal to (1 to 10) <p>KD.4.3 Sort numbers up to two numbers from the smallest number to the largest number or vice versa by using a collection of concrete objects</p> <p>Task Analysis:</p> <ol style="list-style-type: none"> 1. Be able to sort numbers based on many objects (1 to 10) 2. Be able to sort numbers 1 to 10 <p>KD.4.5 Sorts numbers up to two numbers from the smallest number to the largest number or its equivalent using a collection of concrete objects</p> <p>Task Analysis :</p> <ol style="list-style-type: none"> 1. Be able to sort a group of numbers from the smallest or largest (11 to 20) 2. Be able to sort objects according to their number from the smallest to the largest (11 to 20)
<p>Theme/Sub Theme : Myself /I am special</p> <p>KD. 3.4 Explain and carry out the addition and subtraction of numbers involving counts up to 99 in everyday life and linking the addition and subtraction</p> <p>Task Analysis :</p> <ol style="list-style-type: none"> 1. Be able to declare the addition and subtraction of numbers in the form of a collection of concrete objects (1 to 10) 2. Be able to express daily problems that involve addition and subtraction (numbers 1 to 10) <p>KD 4.4 Solve problems of daily life related to the addition and subtraction of numbers involving count numbers up to 99</p> <p>Task Analysis :</p> <ol style="list-style-type: none"> 1. Be able to read numbers (1 to 10) according to many members of a given collection of objects 2. Be able to write numbers (1 to 10) by following many members of the given object collection.

(d) Analysis of Material Concepts

Material concept analysis aims to identify, detail, and systematically arrange relevant concepts to be taught, which are made in the form of concept maps.

Formulation of Learning Objectives

The formulation of learning objectives by following the intended concept map are: (1) Be able to calculate 1 to 10, (2) Be able to declare many members of a collection of objects with the right numbers (1 to 10) (given after recognizing the symbol symbol), (3) Be able to identify numbers 1 to 10, (4) Be able to classify objects according to given numbers, (5) Be able to read numbers 1 to 10, (6) Be able to read numbers (1 to 10) corresponds to many members of a given set of objects, (7) Be able to write numbers (1 to 10) according to many members of a given set of objects, (8) Be able to express many two sets of objects with more, less or equal terms many. (1 to 10), (9) Expressing two numbers with terms greater than, less than, or equal to (1 to 1), (10) Be able to sort numbers based on many objects (1 to 10), (11) Be able to sort numbers 1 to 10, (12) Sort groups of numbers from smallest to largest (11 to 20), (13) Can sort objects according to numbers from smallest or largest (11 to 20), (14) Be able to solve problems in daily life related to addition (1 to 10), (15) Be able to solve problems in daily life related to subtraction (1 to 10).

Design (Planning)

The activities carried out in this step are to compile the prototype of the lesson plan, learning media and teaching materials.

(1) Designing the Lesson Plan

Development of Lesson Plan refers to Permendikbud Number 103 of 2014. The lesson plan is developed based on the basic competency of each meeting, as in Table 4.

Table 4. Description of lesson plan development planning

<p>Lesson Plan - 1 Theme / Sub Theme: Myself / My Body KD.3.1 Explains the meaning of count numbers up to 99 as many members of a collection of objects Learning objectives 1. Be able to say 1 to 10 2. Be able to declare many members about a collection of objects with the right numbers (1 to 10) (given after recognizing the symbol number)</p>
<p>Lesson Plan - 2 Theme / Sub Theme: Myself / My Body KD. 4.1. Presents a count number up to 99 that corresponds to many objects Learning objectives 1. Be able to use numbers 1 to 10 2. Be able to group objects according to the given number</p>
<p>Lesson Plan - 3 Theme / Sub Theme: Myself / My Body KD.3.2 Explain numbers of up to two numbers and the value of the place where the number symbols are made using a set of concrete objects as well as how to read Learning objectives Be able to read the names of numbers 1 to 10</p>
<p>Lesson Plan - 4 Theme / Sub Theme: Myself / My Body KD. 4.2 Write a symbol of numbers up to two numbers that says many members put together a collection with the idea of place values Learning objectives 1. Be able to read numbers (1 to 10) according to many members of a given collection of objects 2. Be able to determine the numbers (1 to 10) by following the number of members of a given collection</p>
<p>Lesson Plan - 5 Themes / Sub Themes: Myself / I Take Care of My Body KD. 3.3 Compare two numbers to two numbers using a collection of objects Learning objectives 1. Be able to specify a lot of two objects with more, less or equal terms. (1 to 10) 2. States two numbers with the terms more than, less than, or equal to (1 to 10)</p>
<p>Lesson Plan - 6 Themes / Sub Themes: Myself / I Take Care of My Body KD.4.3 Describe numbers up to two numbers from large numbers to the largest number or vice versa using a collection of concrete objects Learning objectives 1. Be able to sort numbers based on many objects (1 to 10) 2. Be able to sort numbers 1 to 10</p>
<p>Lesson Plan - 7 Themes / Sub Themes: Myself / I Take Care of My Body KD.4.5 Describe numbers up to two numbers from large numbers to the largest number or vice versa using a collection of concrete objects Learning objectives 1. Be able to group groups of numbers from the largest or pair (11 to 20) 2. Be able to sort a collection of objects according to the number of collected or largest (11 to 20)</p>
<p>Lesson Plan - 8 Theme: Myself / I am Special / Sub</p>

<p>KD. 3.4 Explain and add up and listen to numbers that ask for counts up to 99 in everyday life and associate addition and listening</p> <p>Learning objectives</p> <ol style="list-style-type: none"> 1. Be able to declare the sum and collect numbers in the form of a collection of concrete objects (1 to 10) 2. Be able to express daily problems that require addition and asking (numbers 1 to 10)
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(2) Designing Learning Media

The design of media development that is developed, is based on the learning needs described in the lesson plan. In this connection, the required media can be identified based on the developed lesson plans, as contained in Table 5.

Table 5. Description of Media Needs to be Based on Lesson Plan

<p>LESSON PLAN-1. Learning objectives:</p> <ol style="list-style-type: none"> 1. Be able to say 1 to 10 2. Be able to declare many members of a collection of objects with the right numbers (1 to 10) 	<p>Media needed:</p> <ol style="list-style-type: none"> 1. Cartons or billboards containing numbers 1 to 10 2. The picture card states the numbers 1 to 10
<p>LESSON PLAN-2. Learning objectives:</p> <ol style="list-style-type: none"> 1. Be able to identify numbers 1 to 10 2. Grouping objects according to given numbers (1 to 10) 	<p>Media needed</p> <ol style="list-style-type: none"> 1. Number cards 1 to 10 2. Drawing cards of various objects stating numbers from 1 to 10 (2 sets)
<p>LESSON PLAN-3 Learning Objectives:</p> <ol style="list-style-type: none"> 1. Be able to read the names of numbers 1 to 10 	<p>Media needed</p> <ol style="list-style-type: none"> 1. Card Numbers 1 to 10 2. Cards for how to read numbers from 1 to 10
<p>LESSON PLAN-4. Learning objectives</p> <ol style="list-style-type: none"> 1. Be able to read / write numbers (1 to 10) according to many members of a collection of objects given 	<p>Media needed</p> <ol style="list-style-type: none"> 1. An image card for objects that designate numbers 1 to 10
<p>LESSON PLAN-5 Learning Objectives</p> <ol style="list-style-type: none"> 1. Be able to express a lot of two objects with more, less or equal terms. 2. States two numbers with the terms more than, less than, or equal to (1s / 10) 	<p>Media needed</p> <ol style="list-style-type: none"> 1. An image card for objects that designate numbers 1 to 10 2. Card Numbers 1 to 10
<p>LESSON PLAN-6 Learning Objectives</p> <ol style="list-style-type: none"> 1. Be able to sort numbers based on many objects (1 to 10) 2. Be able to sort numbers 1 to 10 	<p>Media needed</p> <ol style="list-style-type: none"> 1. An image card for objects that designate numbers 1 to 10 2. Number cards 1 to 10
<p>LESSON PLAN-7 Learning Objectives:</p> <ol style="list-style-type: none"> 1. Be able to sort a group of numbers and objects from the smallest or largest (11 to 20) 	<p>Media needed:</p> <ol style="list-style-type: none"> 1. Number cards 10 to 20 2. An image card for objects stating numbers 11 to 20
<p>LESSON PLAN - 8 Learning Objectives</p> <ol style="list-style-type: none"> 1. Be able to declare the addition and subtraction of numbers in the form of a collection of concrete objects (1 to 10) 2. Be able to express daily problems that involve addition and subtraction (numbers 1 to 10) 	<p>Media needed:</p> <ol style="list-style-type: none"> 1. An image card for objects stating 1 to 10

(3) Designing teaching materials.

In this stage a prototype draft of teaching material for each meeting will be produced according to the learning needs in the lesson plan. The description of teaching materials for each lesson plan is contained in Table 6.

Table 6. Descriptions of Learning Material Needs to be Based on Learning Objectives

Lesson Plan-1. Learning objectives: 1. Can say 1 to 10 2. Can declare many members of a collection of objects with the right number (1 to 10)	Teaching Materials: 1. Told 1 to 10 2. States many members of a collection of objects
LESSON PLAN-2. Learning objectives: 1. Be able to identify numbers 1 to 10 2. Grouping objects according to given numbers (1 to 10)	Teaching Materials: 1. Grouping numbers 1 to 10 2. Grouping objects according to numbers 1 to 10
LESSON PLAN-3. Learning objectives: 1. Be able to read the names of numbers 1 to 10	Teaching Materials 1. Reading numbers 1 to 10
LESSON PLAN-4. Learning objectives 1. Be able to read numbers (1 to 10) according to many objects given 2. Be able to write numbers (1 to 10) according to many objects that are given	Teaching materials 1. Spell out according to many objects 2. Write numbers according to many objects 1 to 10
LESSON PLAN-5. Learning objectives 1. Be able to express a lot of two objects with more, less or equal terms. (1 to 10) 2. States two numbers with the terms more than, less than, or equal to (1 to 10)	Teaching Materials 1. State more, less or as much. (1 to 10) 2. States two numbers with the terms more than, less than, or equal to (1 to 10)
LESSON PLAN-6. Learning objectives 1. Be able to sort numbers based on many objects (1 to 10) 2. Be able to sort numbers 1 to 10	Teaching Materials 1. Sort many objects according to the numbers 2. Sorting numbers 1 to 10
LESSON PLAN-7. Learning objectives: 1. Be able to sort a group of numbers from the smallest or largest (11 to 20) 2. Be able to sort a collection of objects according to the number of the smallest or largest (11 to 20)	Media needed: 1. Sort numbers 11 to 20 2. Sorting a collection of objects by following numbers 11 to 20
LESSON PLAN - 8. Learning Objectives 1. Be able to declare the addition and subtraction of numbers in the form of a collection of concrete objects (1 to 10) 2. Be able to express daily problems that involve addition and subtraction (number 1 to 10)	Teaching Materials 1. Adding numbers whose results are 1 to 10 2. Reduction of numbers from 1 to 10 3. State everyday problems involving addition and subtraction (1 to 10)

The Result of Learning Tools Validation

The results of the validation of the mathematics learning toolset in the 2013 curriculum-based coastal area on the subject matter recognize the counting numbers of Class I Elementary School Themes Self contained in the Table 7.

Table 7. The Result of Learning Tools Validation

No	Learning Tools	Meeting no						Mean	Validation Category
		1	2	3	4	5	6		
1.	Lesson Plan	3,73	3,56	3,81	3,45	3,39	3,67	3,60	VeryValid
2.	Learning Media	3,12	3,31	3,17	3,24	3,34	3,09	3,21	Valid
3.	Teaching Materials	3,46	3,62	3,33	3,46	3,57	3,71	3,52	Very Valid

Furthermore, based on the validator's notes related to the lesson plan developed there are several things that need to be improved, those are:

Table 8. Description of Validator Suggestions in Lesson Plan

Lesson Plan	Suggestion
2	The apperception stated in the lesson plan is not in line with the material presented
3	The assessment posted is not in line with the learning objectives
5	Stages of learning in the core activities, you should use the media first and then the formal mathematics
8	The daily problems presented should be in line with the context of the coastal zone

The validity of learning media developed based on the average validator ratings is in the Valid category. As suggested by the validator. Some validator suggestions related to developed media are contained in the following table:

Tabel. 9. Description of Validator Suggestions in Learning Media

Media	Sugesstion
Number Cards	Media sizes are adjusted to their use (students)
	The media displayed by the teacher to students should be large (20 cm x 20 cm)
	The media used by students in understanding the material should be sized (8-10 cm)
Picture Cards	The picture size is not large enough to make the design clearer
	The design of the images used is less varied
	Most of the design time is not bright enough

Overall the evaluation of teaching materials by the validator is in a very valid category. Then based on validator input there are several of things that need improvement, that is given in Table 10.

Table.10. Description of Validator Suggestion in Learning Media

Aspect	Suggestion
Language	There are non-communicative sentences
Letter	There is a large font that is used not according to elementary students
Picture's position	There is the incorrect placement of pictures in teaching materials
Concept Structure	The concept states more than, more than approved, starting from a collection of objects.

Discussion

The results of the study showed that the device developed had good validity, indicating that this device was worthy of being used as a prototype for teachers to develop it on other topics. Several similar studies have shown the same results, such as the development of mathematics teaching materials on the topic of recognizing numbers based on oil palm plantations, the development of learning tools on the topic of introducing fractions that have been utilized in the K13 curriculum assistance activities. In connection with this, the results of this study are also expected to be utilized in similar activities.

In carrying out this research activity, the constraints faced were limited research capacity, so the design objects of the coastal areas used were very limited, the extent of the scope of teaching materials used as study objects was also limited. In this study the object of study of teaching materials is only limited to the Dirku Theme with My Body Sub Theme, I Take Care of my body, and I am Special.

Furthermore, to bridge the ability level of children of elementary school age with abstract mathematical objects, the learning media is one of the important supporting factors in improving the quality of learning. In this connection, for the media used to function optimally, the media need to be designed according to the characteristics and environment of students. Even though in general the functions of the media are the same, their exposure to different subjects requires different ways of presentation and form. For example, knowing the number 2 for students in urban areas can be introduced with 2 public transportation cars, the coastal area is introduced to 2 canoes, the palm plantation area to 2 oil palm transport trucks, the area to collect trash with 2 garbage transport trucks.

In this connection, although there are media with the same function, the design of the pictures should be different to provide learning that is more meaningful, more interesting, and students will not imitate the examples that they have known in the media before.

In developing instructional materials, the unclear boundaries of the material in each meeting made the teacher unable to see the compatibility between the material restrictions in the lesson plans and teaching materials. In connection with that, to handle the teacher the arrangement of the device is set by sorting lesson plans, teaching materials and media. Then in the student book the picture designs that are loaded should be different from the exercises or learning media so that students' insights are better. For example in teaching materials introduce 2 with 2 fish, in practice introduce 2 with 2 shells, and in the media introduce 2 with two canoes.

4. Conclusion

Based on the results of data analysis and discussion, it can be concluded that the validity of learning tools (Lesson Plan, Teaching Materials and Learning Media)

mathematics subjects themselves are categorized valid. Regarding the product of learning tools for teachers, it should be made in the order of lesson plans, teaching materials and media on the topic and the design of drawing objects used for the same concepts in teaching materials, exercises, and learning media should be different. A set of textbooks for students' limits are equated with limits in the teacher's learning tools.

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