

Development Of Interactive Digital Media On Single Data Presentation Materials For Class IV Sdn Jatayu Bandung

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***Abstract.** Difficulty of students in understanding the material, as well as the difficulty of teachers to explain the material in the process of learning Mathematics due to the use of learning media or limited teaching materials, in addition to the lack of use of digital learning media that varies resulted in the learning process of mathematics performed by teachers with students is less than maximum. The research is aimed at developing interactive digital media based on E-Book on Class IV Mathematics subjects, using the Borg and Gall model research and development (R&D) method modified by Sugiyono to solve problems as well as to be an alternative for teachers and students in the learning process of mathematics in SD and to know the validity of products that have been developed through the Stage of Material Validation and Media validation. The Borg and Gall model, modified by Sugiyono, consists of five stages of development: potential and problems, information collection, product design, design validation, and design revision.*

***Keywords:** Learning media, interactive digital e-books, mathematics*

Abstrak. Kesulitan siswa dalam memahami materi, serta kesulitan guru dalam menjelaskan materi dalam proses pembelajaran Matematika dikarenakan penggunaan media pembelajaran atau bahan ajar yang terbatas, selain itu kurangnya penggunaan media pembelajaran digital yang bervariasi mengakibatkan proses pembelajaran matematika yang dilakukan guru dengan siswa kurang maksimal. Penelitian ini bertujuan untuk mengembangkan media digital interaktif berbasis E-Book pada mata pelajaran Matematika Kelas IV, dengan menggunakan metode research and development (R&D) model Borg and Gall yang dimodifikasi oleh Sugiyono untuk memecahkan masalah sekaligus menjadi alternatif bagi guru dan siswa. dalam proses pembelajaran matematika di SD serta mengetahui kevalidan produk yang telah dikembangkan melalui Tahap Validasi Materi dan Validasi Media. Model Borg and Gall yang dimodifikasi oleh Sugiyono terdiri dari lima tahap pengembangan: potensi dan masalah, pengumpulan informasi, desain produk, **validasi desain, dan revisi desain.**

Kata kunci: Media pembelajaran, e-book digital interaktif, matematika

A. INTRODUCTION

Education is a learning experience that lasts in an environment and is acquired throughout life. Education is done by the family, society and government. Formal education through systematic planning arrangements to goals and enforcement refers to the curriculum. According to Law No. 20 of 2003 on the National Education System, Article 1 paragraph 19. The curriculum is a set of plans and arrangements concerning the content and materials of the lesson and the methods used as the organization of educational activities to a specific goal. How many years in recent years the curriculum in Indonesia itself has changed from year to year and the most recent is the Curriculum 2013. Permendikbud No. 67 of 2013 on the Basic Framework and Curriculum Structure of SD/MI stated that “The implementation of the curriculum 2013 on SD / MI is carried out through learning with integrated thematic approaches krlas I to IV.” Integrated thematic learning is integrated learning using themes.

In the 2013 curriculum, there were five themes in the fourth grade, namely, Beautiful Relationship, Always Saving Energy, Caring for Living Beings, Various Jobs, and My Heroes Start of Curriculum 2013 this is the class in the primary school used for class I to class IV test. One of the sub-themes that exist in PKN learning is the diversity of Indonesian culture that includes dance, musical instruments, houses, clothes and traditional weapons.

Learning media is an intermediary in the learning process. (Daryanto, 2010:86). One of the functions of learning media is psychological function, that is, functions related to psychological aspects include: attention function (attracting attention), affective function (inducing feelings or emotions), cognitive function (developing the ability to think), imaginative function and motivational function (encouraging students to arouse interest in learning). Referring to concrete operational stages, learning experiences and as a solution to overcoming media constraints, researchers it offers the presence of new media development that corresponds to concrete operational stages and provides simulated experiences. The media offered is the MIBI (Miniatur Culture Indonesia) media, which is a miniature of the Indonesian island country complete with details of cultural diversity cards of each province in Indonesia, such as dances, musical instruments, indigenous houses and others.

Based on the illustration above, then the penelytis formulates problems within which:

- 1) How to interest students in learning before using MIBI media on the theme of Beautiful Community sub theme Culture Diversity Bangsaku on class IV SD Negri 06667 Medan Denai?
- 2) How are students interested in studying after using MIBI media on the theme of Indahnya Kebersamaan sub theme of Culture Diversity of the Nation on students of class IV SD Negri 066667 Medan Danai?

- 3) What was the response of students at the time of using MIBI media on the theme of Indahnya Kebersamaan sub theme of Culture Diversity of Bangaku on students of class IV SD Negeri 047 Jatayu Bandung?

The aim of this research is to develop MIBI products that are worthy to be used on the theme of Indahnya Kebersamaan sub theme of Bangaku Cultural Diversity in Class IV SD Negeri 047 Jatayu Bandung.

a. Media Learning

Utomo Dananjaya (2013:27) argues that learning is a process of developing the potential of the student by himself actively. Aunurrahman (2012:34) stated that learning or intruction is a system that helps the student's learning process, in which the learning process contains a series of events designed to support the occurrence of internal learning processes. Learning is an activity designed and carried out to develop the potential that students have through learning. The term educational media is often used. Different from many scientists. The diversity of this understanding is implicit from the reference to media that is sometimes equated with technology, tools, and learning resources. For educational technology scientists, the equalization of educational media and education technology is clearly a misguided view, especially if placing the media as the mother of education technology. The misconception invited two leading educational media experts named Richard E. Clark and GaVriel Salomon to reaffirm media position on the field of educational technology, where it is said that "media are part of instructional technology" (Clark dan Salomon, 2012:37). This affirmation points out that there should be no doubt that media is part of educational technology. This view also reinforces the general convention that teaching technology is a separate field of study such as a major or study program and teaching media is one of the mataculiah that supports the discipline of teaching technologies.

b. Specifications of MIBI Media

MIBI media is an abbreviation of Miniatur Culture Indonesia, this MIBi media is one of the learning media that forms about the territory of the Indonesian islands, then this media is equipped with the cultural diversity card of Indonesia. As for the material tools used to make MIBI media are triple, used newspaper paper, fox lem, oil paint, curtains, scissors, pencils, paint brushes, gasoline oil, water, linen seduction, cuttonbud stems, cultural images (native houses, traditional clothes, traditional weapons, and traditional dances), large containers, bender, clean fabrics, combustion cloth and black lace. From the point of view of learning PKN, this media can make students know the origin of physical culture that suits their province. In addition, this MIBI media can also make students know the natural landscape of Indonesia.

B. RESEARCH METHOD

This research uses research and development methods or research R&D (Research & Development) with the ADDIE model. (Analysis-Design-DeVelopment- Implement-EVAluate).

Research and development methods are the methods used to produce a particular product and test the effectiveness of such products.

This developmental research follows cyclical steps. These research or development steps consist of a study of the research findings of the product to be developed. Development based on these findings, field testing is carried out according to the background in which the product will be used and review the results of field testing. In short, research and development can be understood as research that produces a product that is validated by a number of team of experts that will be subsequently tested in the field. The stages used in this study are as follows:

1) Analysis (Analysis)

The analysis stage is the stage in which researchers analyze the need for learning media in the learning process. The stage of analysis is the need analysis and curriculum analysis.

2) Planned (Design)

The planning phase is an advanced stage after research analyses the problems of needs and curriculum. At this stage of design, the researchers designed Miniature Cultural Indonesia media design with the theme of Indahnya Kebersaman and media evaluation instruments.

3) The development (DeVeloPment)

At this stage of development, the learning media MIBI Wonderful Theme Together is developed according to the plans that have been drawn up. Subsequently, the learning media will be tested validation by 3 validators consisting of 2 docents (material experts, media) and 1 teacher of class IV SD.

4) Application (Implementation) Application was carried out on students of class IV in SD State 047 Jatayu Bandung with a total of 17 students.

The research design used in this study is as follows:

1) Observed

Observation is done to know the learning activities, the use of teaching materials and the competences to be achieved. Observation is used to obtain data.

2) The Angket Method

Angket is a tool used to collect and record data or information, opinions, and understand in causal relationships. (Arifin, 2016). Angket is used during expert validation tests based on the Guttman scale, and small scale tests to determine the validity of the MIBI media.

3) Method of Documentation

Documentation method is a technique for obtaining information from various written sources or documents available to respondents. (Sukardi, 2015). Documentation method is used to obtain data about MIBI manufacturing ptoses. The techniques used in this research are the quantitative and qualitative analysis and descriptive methods used in the processing of data from the results of the Validation of media designers, learning experts, material experts and linguists as well as the evaluation of students.

4) Media learning of MIBI.

Data previously validated by the Validators is then analyzed in the form of presentation analysis. The data that has been collected is then first changed into quantitative according to the weight of the scores obtained, the modification using the following formula (Sugiyono, 2015, p. and 418):

$$\rho = \frac{\sum x}{\sum xi} \times 100\%$$

The Explanation:

P: Presentation of Validation

$\sum x$: Response score

$\sum xi$: The highest answer score

Number of Costan

C. RESULTS AND DISCUSSION

1. Analysis

Based on the results of initial observations conducted in Class IV SD State 047 Jatayu Bandung, the media used during the teaching process is very limited and less varied. The media used, among other things, images attached to the classroom walls, maps and atlases (kumpulan peta). This makes it difficult for teachers to provide the material. One of the efforts that can be made to overcome the limitations of cultural diversity media is by developing specialized media to study the diversity of culture in Indonesia along with images and lists of the name. The product development phase needs analysis is carried out by researchers at the time of initial observation of the research. The products developed in this research are miniatures of Indonesian culture on the theme of the beautiful joint sub-theme of cultural diversity of peoples of learning 1 class IV SD/MI.

2. Planned

This MIBI learning media (Indonesian culture miniature) is made manually using paper blades and covered with triple sockets. With the shape of the map and the presence of the use of bright colors that can attract students to keep up with the learning process. This MIBI (Indonesian Cultural Miniature) media can be used by students either independently or used with teachers when the learning process takes place.

MIBI media is designed to help teachers in explaining the learning material to students during the learning process, this medium can also give the spirit of learning to students and make students to learn independently, then this medium is designed in such a way, both in terms of appearance, shape, color, image and content of the material contained in it.

3. The development (DeVelopment)

At this stage of development, the learning media of the MIBI Wonderful Theme Together is developed according to the plans that have been drawn up. Subsequently, media learning is tested for validation by 2 Validators consisting of a lecturer as a media expert and a class teacher as a material expert. Validation is measured through the use of MIBI media obtained from the filling of scores on the lift.

4. Applying (Implementation)

There are two stages in the application of the product, namely the Expert Validation stage and the stage of direct application in learning.

1) Stage of Expert Validation

Validation of this learning media product is carried out by material experts and media experts. For material experts performed by Sacred Febriyani, S.Pd He is a teacher of class IV SDN 047 Jatayu Bandung and media expert for products this learning media is Mother Nurhasanah, S.Pd., M. Pd She is a lecturer at the University of Education Indonesia

2) Stage of direct

At this stage, MIBI media product testing is applied in the learning process. A total of 17 students used this media resulting from MIBI application.

Based on the results of the Validation carried out by the material experts, that the materials developed against the MIBI media are already in accordance with the core competence, basic competence as well as learning indicators and according to the content of the learning materials taught on the theme of *Indahnya Kebersamaan*, the subjects of the cultural diversity of the people. This is in accordance with what was invented by Nana Sudjana and Ahmad RiVai (2011:4-5) that one of the considerations of media selection is compatibility with the purpose and content of learning.

This medium has advantages and disadvantages. The advantage of this media is that it has an attractive design with islands that are similar to the original so that it makes students more enthusiastic in following the teaching learning process. MIBI media also serves to enable students to know where every province is located in Indonesia along with the culture that is in each province.

The disadvantage of MIBI media is that its use takes a long time, so it can make students feel bored in following the learning process. Therefore, the teacher is condemned to be able to manage the time so that the students remain excited in following the process of graduation. In addition, the materials used are quite a lot and the process of making media takes quite a long time.

D. CLOSING

Based on the results of research using R&D methods, the conclusion can be drawn that the MIBI (Miniatur Culture Indonesia) media development test results have a high level of validity.

Based on the results of the Validation of material experts and media experts, as well as the application of the MIBI media development application on the trainees are considered suitable for use in the learning process.

Based on the results of Material Expert Validation with a presentation of 91.80% with the category “very Valid”, and the media designer validation results with presentations of 96.45% with category “highly Valid,” as well as the validation result of the application on the student with the presentation 93.22% with a category “extremely Valid”.

From this acquisition means that MIBI (Miniatur Culture Indonesia) learning media is worthy to be used in thematic learning.

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