Development of Matiklopedia Based Character Building in Yunior High School

Achmad Buchori1, Sutrisno2, Noviana Dini Rahmawati3
Study Program of Mathematics Education PGRI University of Semarang
e-mail: bucherypgri@gmail.com, sutrisno100jt@gmail.com, fadiniz@gmail.com

Abstract

Effect of rapid development era is greatly influenced lifestyle and socio-cultural aspects in society. Various regulations have been made in order to withstand the negative effects of globalization in Indonesia, but acts of violence, drugs, corruption, collusion and nepotism are rampant in society, therefore education is an effective means to inculcate values and attitudes of non-violence, anti-drug, anti-corruption early age, especially age 12-15 years their junior high school because forerunner to the progress of this nation, among the learners is very close to the media application, but media that is not touched by the needs of their everyday character, therefore it is very media needed that can improve the character of both students, one of them by using Matiklopedia media, because the media is expected to motivate the students to better understand the problems posed and can lead to imagination and creative thinking to prepare stimulus. This study aimed to develop the learning of mathematics with a medium term Matiklopedia which is based on character education for junior high school students. In accordance with these objectives, the type of study is a research development (educational research and development) by Plomp (1997) and modified Borg and Gall, which includes five phases: (1) initial research (preliminary phase investigation), (2) design (design phase), (3) realisasi / construction (phase realization / construction), (4) testing, evaluation and revision, (phase test, evaluation & revision) and (5) implementation (implementation phase). In this first year has produced Matiklopedia the initial design has been validated by experts and media materials to the value of the matter experts with the percentage 90% are excellent and validation of media experts with a percentage score of 96.75% are excellent, but there was still construct validated by student SMP 1 and SMP 2 Semarang.

Keywords: Development, Matiklopedia junior, character education

INTRODUCTION

Developments in science and technology today, also affected the world of education, it brings a positive and negative impact on the behavior and character of students at school and at home. The challenge of improving the quality, relevance, and effectiveness of education as a national demands in line with the development and progress of society clearly has implications in education. Reform efforts can be done in terms of physical facilities and quality education of teachers as educators. The teacher is the gateway update that has a role as an agent of modernization in education. It is a daunting task for teachers to work to improve the quality of education by having innovations in learning that one of them by using instructional media. Because the media is a vital part of learning in the learning process, one of which can attract the attention of students so that foster student motivation and can improve the quality of learning outcomes.

In teaching methodologies there are two of the most prominent aspects of the teaching methods and teaching media as a teaching tool (Nana Sudjana and Rival Ahmad, 2010: 1). This teaching method is now required to incorporate character education in every classroom curriculum based on the 2013. Media is one of the critical success of student learning. In the case of learning activities there is teaching and learning process, i.e. transferring the information from the information resources to the recipient through a particular medium. With the media are attractive and equipped with repertoire of
national character, then students are more accepting of the learning information in order to reach the learning objectives. The teachers ought to develop their own media that attractive, economical, effective, and easy to make. As a teacher facilitator should be able to provide a facility that allows ease of teaching and learning activities.

RESEARCH METHOD
This research is a developing character education through the medium of learning in elementary Matiklopedia, in accordance with these objectives, the type of study is a research development (educational research and development). Appropriate to the following model from gall and borg:

RESULTS ACHIEVED
The development of this research has been adapted to the model development and gall borg consisting of 10 steps, based on the first year's target of this research is a preliminary study which includes 3 aspects of the study followed the development which includes 4 aspects are described as follows:

Preliminary studies include:
1. Library Study
In doing library research endeavors have been made to increase the study of theory related to the depth of the material that will be made in the form of matiklopedia, books - literature books used are from various sources such as books and book the student teachers in the curriculum in 2013 to Grade 7 Yunior High school children, maths books erlangga 7th grade, 6th grade math book Yudhisthira, books on character education, computer books and articles on the internet which in essence is to produce matiklopedia that in terms of mathematics content, media content and character well integrated with each other online and offline.

2. Field Study
In a field study selected two (2) favorite school in the city of Semarang Semarang SMPN 1,2 monument of a visit to the school gained much info as follows: (1) from teachers and students that the absence of 6th grade math teacher and student classroom 7 were able to make matiklopedia both online and offline, (2) the absence of a book of
mathematics that includes the nation's 18 characters explicitly in any math book, (3) the absence of a teacher who is able to make the application of mathematics books online and offline. Of these issues teachers and students at SMPN 1,2 Semarang very enthusiastic if matiklopedia that will be developed can be used in schools

3. Matiklopedia Compile and Design
At this stage of product design, drafting design researchers to develop Matiklopedia Mathematics SD-based Character Building. The steps of making Matiklopedia are as follows:

1) Looking at the math syllabus 7th grade appropriate curriculum 2013
2) Determine KI, KD and appropriate indicators
3) Select the odd semester mathematics grade 6
4) Select the model of Problem Based Learning (PBL), a model Project Based Learning (PPA) or Discovery Learning in the delivery of content
5) Determine the value of the character to be achieved in a matter of education adapted to the character of the nation's 18
6) Develop materials with software Corel draw, adobe Photoshop equiped with contextual problems with the images corresponding to the material
7) Save the file in PNG or JPG form
8) Converting a PNG or JPG file in PDF format
9) Select the appropriate instrumental music elementary level child development
10) Incorporate mathematics in PDF form to Flip Bookmaker
11) Insert the appropriate instrumental music students from elementary level thinking
12) Creating a hyperlink in the table of contents
13) publish in the form of SWF
14) Create a blog with the name matiklopediasmp.blogspot.com
15) embed SWF files into the blog
16) the material can be opened online as open book display.
17) Print color material in the form of a PDF file with 150 CTS paper that look good and strong

Figure 2 Photo matiklopedia online demo
Development study includes:

Design assessment

Assessment matiklopedia design both online and offline matiklopediasmp.blogspot.com address printed form as a book done by 1) Prof.Dr.Sunandar, M.Pd. validators of the material, whereas 2) Febrian Murti Dewanto, M. Kom. Media validators with the results of the evaluation as follows:

A. Result of Product Design Assessment

Product design is a process of assessment activities to assess whether the product is cultivated Matiklopedia rationally be effective or not. Previous draft designs discussed with the research team Drs. Sutrisno, M.Pd. and Noviana Dini Rahmawati, M.Pd.
Then at the validation stage is done by asking the opinion of the expert or experts who are experienced to assess design products produced, so that we can know advantages and disadvantages. The technique used is to use the questionnaire method (sheet validation). The results of the assessment as follows:

1. Learning Material Expert
   a. Data Presentation

The following table presents the results of an expert assessment of exposure descriptive learning materials for the development of these materials are submitted through the questionnaire method validation sheet instruments.

Table 1: Results Through Matter Expert assessment instrument validation sheet

<table>
<thead>
<tr>
<th>No</th>
<th>Assessment aspect</th>
<th>Validator 1</th>
<th>Validator 2</th>
<th>feasibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General</td>
<td>90%</td>
<td>90%</td>
<td>90%</td>
</tr>
<tr>
<td>2</td>
<td>Substance of material</td>
<td>80%</td>
<td>100%</td>
<td>90%</td>
</tr>
<tr>
<td>3</td>
<td>Learning design</td>
<td>90%</td>
<td>90%</td>
<td>90%</td>
</tr>
</tbody>
</table>

From the table above it can be seen to the general aspects of the material gets 90%, 90% to aspects of material substance, and 90% for instructional design aspects.

Table 3 an overview of Data Assessment and Review Material Expert

<table>
<thead>
<tr>
<th>Components</th>
<th>Suggestions / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>The material is less clear set of examples and their contextual character</td>
<td>Need a concrete example making it easier for students to understand the material</td>
</tr>
</tbody>
</table>

All the data from the review, assessment, and discussions with experts learning materials to be considered in the context of the revision of refinement components Matiklopedia elementary mathematics by using a model of character education conducted further research procedures that test the learner matiklopedia users elementary mathematics by using a model of character education.
2. Learning Media Expert
   a. Presentation of Data
   The following table presents the results of an expert assessment of exposure deskripsi
tif learning media for the development of these materials are submitted through the questionnaire method validation sheet instruments.

   Table 4 Results of Media Expert assessment through a validation sheet

<table>
<thead>
<tr>
<th>No</th>
<th>aspect Validity</th>
<th>Validator 1</th>
<th>Validator 2</th>
<th>Feasibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>2</td>
<td>Software Engineering</td>
<td>100%</td>
<td>98%</td>
<td>99%</td>
</tr>
<tr>
<td>3</td>
<td>Visual Communication</td>
<td>100%</td>
<td>98%</td>
<td>99%</td>
</tr>
<tr>
<td>4</td>
<td>Models of Learning</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Rata-rata</td>
<td>100%</td>
<td>98%</td>
<td>99%</td>
</tr>
</tbody>
</table>

From the above table it can be seen to the general aspects of the media have 100%, 99% to aspects of the software, 99% for aspects of visual communication and 100% for the learning model.to understanding pointed reviewer presented in Table 5.

   Table 5 Summary of Data Assessment and Review Media Expert

<table>
<thead>
<tr>
<th>component</th>
<th>Suggestion/comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. size of the side bar menu / select one)</td>
<td>1. removed just above the menu (use the size of the side bar / select one)</td>
</tr>
<tr>
<td>2. The size of the flash of FlipBookMaker</td>
<td>2. The size of the flash of the flip should be enlarged in order to look</td>
</tr>
</tbody>
</table>

3. Design Revision

1) Revision on Development Product Material
Based on the results of the assessment or expert responses matter, then basically matiklopedia elementary mathematics by using character education does not need to have revisions or improvements, but input, open-ended questions, trying to be realized as well as possible so that the resulting development the better.

2) Revision I on Development Product Material
Based on the results of the expert responses pmbelajaran media, the media basically learning does not need to get improvements, but feedback, suggestions and comments made by the media in the validation sheet of open questions, trying to be realized as well as possible so that the resulting product development the better.
4. Test Limited in Schools

From the test results are limited in SMPN 01 and SMPN 2 Semarang with given questionnaires and interviews obtained more than 90% of students are very interested in the products of matiklopedia both in print and online.

Conclusion :
1) It has been produced products both online and offline matiklopedia good material according to experts and media experts
2) It has produced a prototype matiklopedia which will be ready in a limited test in 1,2 SMPN Semarang

References

Samsudi. 2009. Disain Penelitian Pendidikan. Semarang : UNNES PRESS.