



The Development of Learning Media Based on Islamic Comics in Natural Sciences Force and Motion Material

Pengembangan Media Pembelajaran Berbasis Komik Islam Pada Materi Gaya Dan Gerak IPA

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This research and development aims to increase the effectiveness of learning in class IV SD Muhammadiyah 9 Malang. The development of Islamic comic-based learning media aims to (1) produce learning media products by describing the media development process, (2) describe the level of feasibility of learning media, and (3) describe the level of effectiveness of learning media in the science material subject force and motion of Muhammadiyah 9 "Panglima Sudirman" Malang fourth grade elementary school students. This study refers to the Borg and Gall research model by adopting six main steps, namely: 1) needs analysis, 2) media development, 3) media testing, 4) media revision, 5) field testing, and 6) implementation. Data analysis used the Linkert scale for media eligibility data and SPSS 16.0 for Windows for media effectiveness data. Islamic comic-based learning media has been declared valid by experts. Attendance from stage I test material experts was 79%, stage II test material experts were 100%, linguists were 100%, media design experts were 100%, and learning practitioners or class teachers were 100%. The application of learning media was carried out in 3 stages, namely small group tests with 4 students, medium groups with 16 students, and large groups with 19 students in the control class and 19 students in the experimental class. Islamic comic-based learning media effectively improves student learning outcomes in class IV Al Batani as an experimental class, which is 90.56 with an increase in the average value of 21.18%, starting from 74.73 to 90.56.

Keywords: Development, Learning Media, Islamic Comics, Force, and Motion

Penelitian dan pengembangan ini bertujuan untuk meningkatkan efektivitas pembelajaran di kelas IV SD Muhammadiyah 9 Malang. Pengembangan media pembelajaran berbasis komik Islami bertujuan untuk (1) menghasilkan produk media pembelajaran dengan mendeskripsikan proses pengembangan media, (2) mendeskripsikan tingkat kelayakan media pembelajaran, dan (3) mendeskripsikan tingkat keefektifan media pembelajaran di materi IPA gaya dan gerak siswa kelas IV SD Muhammadiyah 9 “Panglima Sudirman” Malang. Penelitian ini mengacu pada model penelitian Borg and Gall dengan mengadopsi enam langkah utama, yaitu: 1) analisis kebutuhan, 2) pengembangan media, 3) pengujian media, 4) revisi media, 5) pengujian lapangan, dan 6) implementasi. Analisis data menggunakan skala Linkert untuk data kelayakan media dan SPSS 16.0 for Windows untuk data keefektifan media. Media pembelajaran berbasis komik islami telah dinyatakan valid oleh para ahli. Kehadiran ahli materi tes tahap I 79%, ahli materi tes tahap II 100%, ahli bahasa 100%, ahli desain media 100%, dan praktisi pembelajaran atau guru kelas 100%. Penerapan media pembelajaran dilakukan dalam 3 tahap yaitu uji kelompok kecil dengan 4 siswa, kelompok sedang dengan 16 siswa, dan kelompok besar dengan 19 siswa pada kelas kontrol dan 19 siswa pada kelas eksperimen. Media pembelajaran berbasis komik islami efektif meningkatkan hasil belajar siswa kelas IV Al Batani sebagai kelas eksperimen yaitu sebesar 90,56 dengan peningkatan nilai rata-rata sebesar 21,18% yaitu dimulai dari 74,73 menjadi 90,56.

Kata Kunci: Pengembangan, Media Pembelajaran, Komik Islami, Gaya, dan Gerak

INTRODUCTION

Students are considered to be not reading, lazy, and exhibiting other negative traits if learning objectives are not conveyed perfectly (Megayanti, 2016). This will not drag on if the teacher can read himself. In the learning process, the most important components are teachers and students. Teachers as providers are related to student motivation (Rosyida, Mustaji, & Subroto, 2018). The use of media is one way to improve quality in the learning process and achieve the desired goals (Ahmad Zaki, 2020).

The media serves as a guide for students to comprehend and comprehend the information conveyed by the teacher through the media. The media must also be able to have a positive impact on students, create a sense of joy, and increase interest in the learning material it contains. The teaching and learning process is not only for the cognitive aspect; it also must be able to influence the affective and psychomotor aspects of students.

Based on a needs analysis, only textbooks were used in the science learning process. The textbooks are full of reading texts, so it makes students feel bored because they are constantly required to read and read, from morning to evening. There has been no discernible progress in terms of Islamic, social, and economic values and skills. The following are some of the weaknesses in the previous science textbooks: the cover of the book looks monotonous and less colorful; there are similarities for all existing themes; the pictures on the material are lacking; there are no Islamic values; and the content of the material is full of text delivery.

In the learning process, students have three personalities: visual (Sari & Lestari, 2018), auditory (Wahyuni, 2017), and kinesthetic (Umami, Kurniah, & Delrefi, 2016). Children will also understand material more easily with direct activities or practicum (Umami et al., 2016). Students will feel confused if their learning media are full of reading because it is abstract, so they need help making the material concrete. The auxiliary media for turning material into concrete is visual media, so that material that was originally in the form of reading text can be visualized or illustrated with pictures on learning media. Comics are an arrangement of pictures in a row that are equipped with supporting story text (Mahendra, 2021). Comics are a print medium that is very close to the world of children. Besides being easy to distribute, comics are also easy to store. However, comics are only used for reading or even for display, and most of the learning in Indonesia rarely uses comic media.

Even so, the trend of using comics is very popular among children. In fact, elementary school students are more interested in reading comics compared to textbooks full of text (Anisah & Azizah, 2016). It is easier for students to remember reading the content in comics because they are supported by interesting pictures and the language in comics is very simple. If you look at the message contained in the comic, it is very relevant to the

child's age and gives a very good response. Detective Conan teaches us to think critically and rationally, Captain Tsubasa instills in us a strong fighting spirit and never gives up when faced with a challenge, Mecha informs us about the benefits of technology, and Naruto represents the importance of helping others and having dreams.

Creativity in learning is needed, and with the development of very powerful technology, everyone can access information from anywhere and at any time without age restrictions (Jamun, 2018). This has a positive impact but poses a threat to character development in children if there is no supervision from the people around them; therefore, Islamic values must be instilled at every opportunity to protect children's characters from technological threats. Komik Islami adalah salah satu contoh media yang efektif dan komunikatif serta menjadi alternatif yang baik bagi siswa.

Islamic comics based on religion are needed in the formation of student characters. Islamic comics are reading media in a language full of Islamic values, in the sense of reading a prayer before studying with basmallah and ending with reading hamdallah, helping each other, never giving up, and polite and courteous language. Islamic comics are packed with simple material and equipped with practice and practical questions. The development of comic media is very suitable for providing learning, facilitating students, and providing a stimulus for students to easily remember the material presented.

Based on the problem identification above, the researcher developed Islamic comic-based learning media on the subject of force and motion for Grade IV SD/MI students. The material regarding force and movement turned out to be difficult for students to understand, if only using a text book, resulting in student learning outcomes that were not optimal and learning objectives that were not achieved. In fact, since science learning is based on the surrounding natural environment, teachers must be able to present teaching materials from around their environment to support the success of learning, but the availability of these teaching materials can be replaced by print media, so this comic medium is one way to facilitate students in understanding the material.

METHOD

Research on the Development of Islamic Comic-Based Learning Media in Science Subjects on force and motion Materials uses research and development methods, better known as RnD. Seels and Richey say that development research is a systematic study to plan, develop, and evaluate under certain conditions.

The RnD method is one of the methods in research used to produce products and test these products (Sugiyono, 2011). In research, needs analysis is performed to assess the effectiveness of the media. This research and development uses a model developed by Borg and Gall. As a basis for research and development, this model has six main steps. The main step consists of six steps, and the fourth implementation requires five stages (Effendi &

Hendriyani, 2016). The comparison of main steps and total steps is as follows:

Table 1 The main steps of the Borg and Gall Research Model

No.	Main step	Total Steps
1	Needs Analysis	Needs Analysis
2	Planning	Planning
3	Media Development	Media Development
4	Media Trials	Early Trials Media Revision Field Test Media Revision Field Test
5	Revision	Revision (Final Product)
6	Field Test and Implementation	Field Test And Implementation

Subjects in research and development were students of classes IV Al Farabi and SD Muhammadiyah 9 Malang at Al Batani. This research and development will be carried out in three tests: individuals, small groups, and large groups. The first trial design is an individual trial on one of the total number of students. After conducting individual tests, it is planned to continue in small groups, namely with 4 students out of the total.

Then proceed with the intermediate trial; this large group test involves 16 students. This large group trial is the final stage, and there are results of comparisons between groups. The big group is determined by looking at the results of daily repetition of the same material, namely force and motion. After that, it is divided based on the value obtained by students. The student with the highest score out of half of the students will be placed in the control group. The rest will enter the experimental class and get media to help understand the material.

After knowing the experimental and control groups, the next step is to test the effectiveness of the media. The media effectiveness test was carried out based on the different treatments for each class. The treatment was that each group received the same material and types of questions with the same level of difficulty. But the difference lies in the provision of comic media; comic media is only for the lower class or experimental class. With the comparison between the experimental class and the control class, the level of effectiveness in the application of Islamic comic-based learning media in science subjects on force and motion will be seen.

RESULT AND DISCUSSION

1. Product development in the form of Islamic comics as a companion medium in science learning on the subject of force and motion for fourth grade students of SD/MI.

The development of this comic medium aims to assist students in fully understanding the concepts of force and motion. Based on a needs analysis, only textbooks were used in the science learning process. The textbooks are full of reading texts, so it makes students feel bored because they are constantly required to read and read, from morning to evening. There has been no discernible

progress in terms of Islamic, social, and economic values and skills.

This Islamic comic-based learning medium consists of 5 series, namely series 1 (various forces and motions), series 2 (relationships between force and motion), series 3 (benefits of force and motion), series 4 (practicum on force and motion), and series 5 (force and motion exercises).

The steps for media development in terms of graphic design are as follows:

- a. Open the CorelDraw application; this time we are using the X5 version.
- b. After the application opens, set the worksheet margin size to A4 size.
- c. Draw a pattern with the Pen Tool or the Freehand Tool.
- d. Draw the characters in the media.
- e. The selected character adopts the children's cartoon Upin and Ipin. The characters Upin and Ipin are well-known cartoon characters and are close to the world of children.
- f. Repeat the steps at point "c" until all the desired characters are finished, as shown below.
- g. After finishing drawing the character, color the character using the "color palette."
- h. Use the same steps to draw the "background" and other decorations.
- i. Manage all characters and discussions using trip delimiters.
- j. When finished, set the text or input text according to the "storyboard" that has been compiled. Enter text using the "Text Tool."
- k. Repeat the steps above to complete all designs, but still based on the story or "story board" that was created. To produce an appropriate design, first check and understand the "story board" that has been prepared.



Picture 1. Media Comic



Pictures 2. Using Media in Learning

2. Validation of a product in the form of Islamic comics as a companion medium in learning science

in the subject of force and motion for SD and MI fourth grade students.

Researchers validate learning media before they are applied to students, with the aim of seeing the feasibility of the media. There are several experts who provide validation value in learning media, including material experts, linguists, design experts, and learning practitioners. After obtaining the data from the questionnaire that has been given, the next step in the analysis is to look at the percentage of eligibility for the media. The eligibility data for the media is as follows:

- a. Based on the feasibility test of the material aspects of the media by the material validator, it obtained a value of 100%;
 - b. Percentage of 100% on the Linkert Scale was included in the feasible category.
 - c. Based on the feasibility test of the language aspect of the media by the material validator, it obtained a score of 100%; a percentage of 100% on the Linkert Scale was included in the feasible category.
 - d. Based on the media feasibility test, the media design aspect as evaluated by the media design validator obtained a score of 100%, and a percentage of 100% on the Linkert Scale was included in the feasible category.
 - e. Based on the feasibility test of the media aspect of the practitioner or class teacher, the class teacher of SD Muhammadiyah 9 ("Panglima Sudirman") Malang obtained a score of 100%; a percentage of 100% on the Linkert Scale is included in the feasible category.
 - f. Based on the feasibility and convenience test of the user aspect of the media by the experimental group, students as media users obtained a score of 91%; a percentage of 91% on the Linkert Scale was included in the feasible category.
3. The results of the experts on the feasibility of the media above show that Islamic comic-based learning media in the natural sciences subject matter of force and motion is appropriate for use for fourth grade students of SD/MI.

Product effectiveness of Islamic comics as a companion medium in learning natural sciences on the subject of force and motion for SD/MI fourth grade students. The process of implementing learning media is carried out according to the stages or steps in the Borg and Gall development model. In stage 5, there is a field test that is carried out three times: a small group test with four students, a medium group test with 16 students, and the last stage, a media test in the control and experimental groups as a large group test. for small and medium group tests conducted by 20 students from other classes, so that students experience new experiences with the developed learning media. In the small test phase with four students, the media percentage reached 97%. Based on the Linkert scale test, the score of 97% is included in the proper/unrevised category. The test was carried out for the middle group with a total of 16 students, and based on a percentage of 94%, the learning medium was said to be ~~feasible and without revision.~~

After analyzing the small and medium test data, the next stage is the large test, or the division of the control and experimental groups. At this stage, using 2 classes The control class used Class IV Al Farabi with 19 students as respondents, while the experimental class used Class IV Al Batani with the same number of respondents, namely 19 students.

Three stages were carried out in the experimental class, namely the ability test with the pretest to determine the level of students' understanding of the material developed in the media. The second stage is the explanation of the material, assisted by learning media based on Islamic comics, to help students understand the force and motion of the material. The third stage is the posttest, or test of differences in the use of print media or packages from schools using Islamic comic-based learning media. Differences in student learning outcomes before and after using Islamic comic-based learning media in science subjects on force and motion for fourth grade students at SD Muhammadiyah 9, "Panglima Sudirman," Malang

Table 2 **List of experimental class pretest and posttest values.**

No.	Name	Pretest	Posttest
1	Atalantha	85	90
2	Hadijah	85	-
4	Naifah	85	90
3	Krisna	80	100
5	Ahmad	80	90
6	Fatihah	80	90
7	Jennisa	80	90
8	Zasky	80	95
9	Salsabila	75	85
10	Andi	75	100
11	Raihanah	75	100
12	Satrio	75	95
13	Aisyah	70	85
14	Muhammad	70	90
15	Fatimah	65	80
16	Aditya	65	90
17	Aura	65	85
18	Fidela	65	90
19	Fiona	65	85
Sum		1420	1630
Averages		74,73	90,56

Students have three characters in the learning process: namely, visual, or children will more easily understand the material with the help of media images; auditory, or children will more easily understand the material with the help of sound; and kinesthetic, or children will more easily understand the material with direct activities or practicum.

Learning media that helps to change material into concrete is called "visual media," so that material that was originally in the form of reading text can be visualized or

illustrated with pictures on learning media. Comics are a series of pictures in a row that are equipped with supporting story text. Looking at learning in Europe, the use of comics can increase student participation in class. With comics in learning, the role of the teacher will be easier to convey material, in addition to increasing student motivation. Comic media is a concrete medium that makes it easier for children to understand the material they read with the help of pictures that match the reading. Most people know that comics are a mixture of insight and entertainment, or in the language of mediums.

CONCLUSIONS

Based on the results of the analysis of the use of learning media in the experimental class, it can increase the understanding test score by 15.83, starting from an average value of 74.73 to an average value of 90.56. Based on SPSS calculations, the significance value is (Sig. (2-tailed)), which is 0.000,0 so that H_a is accepted. It will be accepted if the significance value of the analysis results has a value of <0.05 .

H_a , that is, there is a difference between classes that do not use Islamic comic-based learning media (the control class) and classes that use Islamic comic-based learning media (the experimental class).

Based on the results of increasing student scores using learning media products based on Islamic comics on style and motion material above, it can be said that Islamic comic learning media in science subjects on style and motion material for fourth grade SD/MI students is effective and can increase student scores by the highest average of 90.56, or an increase of 21.18%.

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