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Submission date: 02-Nov-2023 10:22PM (UTC-0500)

Submission ID: 2215658767

File name: 18_207200039_Rifa_Mufidah_Artikel_JSL_121357.docx (2.53M)

Word count: 7002

Character count: 38217



Indonesian Society for Science Educators

Journal of Science Learning

journal homepage: ejournal.upi.edu/index.php/jslearning



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The Influence of Big-Book Learning Media Based on Scientific Literacy on Students' Scientific Reading Ability: Text Scaffolding Skills and Reading Comprehension

5

NOVELTY

There have been many studies that have studied big-book learning media on reading ability, but each study certainly has its own characteristics related to this theme. This research focuses more on the use of big-book learning media based on scientific literacy on the scientific reading abilities of class VII students. This research is novel in exploring students' scientific reading abilities based on big-book learning media based on scientific literacy which did not exist in previous studies. Scientific reading ability is an asset used to achieve success in a study. In addition, this research provides knowledge regarding selecting appropriate learning media in improving students' scientific reading abilities. Therefore, this research is very useful if it is developed for further research on different materials.

ABSTRACT

Choosing the right learning media is needed to improve 21st century knowledge and skills, such as scientific reading skills. Big-Book is a learning medium in the form of a book that is relatively large in size and contains picture illustrations and text. The aim of this research is to determine the implementation and influence of scientific literacy-based big-book learning media on students' scientific reading abilities. The method used in this research is the Quasi Experimental method. The subjects used in this research were class

VII students, using 2 classes consisting of 30 students. Sampling was carried out using purposive sampling, namely taking samples with certain considerations. The data collection technique in this research is a test by conducting a pretest and posttest. Meanwhile, the data analysis technique used is the ANCOVA analysis test. The research results based on the ANCOVA test show a significance value of $0.00 < 0.05$, meaning that big-book learning media based on scientific literacy has a significant difference or influence on students' scientific reading abilities. So the conclusion of this research is that big-book media based on scientific literacy is very suitable to be used as a support for special learning regarding scientific reading skills.

Keywords

Big-Book, Reading Ability, Scientific Literacy, Learning Media

1. Introduction (Word Style "Heading 1")

The development of science and technology that emerged in the 21st century can influence the dynamics of various science learning. The development of science and technology should be adapted to human competence so that they can make good use of science and technology by considering the impact on the next generation (Jo, 2011; Tursinawati & Widodo, 2019) . The formation of character in addition to competence in the knowledge dimension to face global competition is a demand for global development which demands science learning that is oriented towards achieving 21st century capabilities. In the development of technology the concept of science has become a basis that is implemented for discovery activities in revealing clarity regarding natural phenomena . Apart from that, in cultivating students' interest and competence in studying science education and technology, science learning has its own strategy (Masruroh & Arif, 2021; Tangen et al., 2011) .

1 In the world of education today, students are required to play a more active role
2 in every lesson (Hani'ah & Fadly, 2022) . Students' interest and activeness during the
3 learning process greatly influences the understanding of the material they receive in
4 acquiring new knowledge (Anindita & Pertiwi, 2022) . For this reason, based on
5 constructivism theory, to obtain and form knowledge, efforts are needed from the students
6 themselves (Crystallography, 2016) . One of students' efforts to acquire and form
7 knowledge is to develop reading skills. Because in the 21st century skills are the main
8 focus in education, especially science education (Nisrina et al., 2020) .

9 As explained by Nazilah, reading a text or text will lead someone to dig deeper
10 into information so as to gain new knowledge (Mcnamara & Floyd, 2011; Nazilah et al.,
11 2019) . Students who have a good interest in reading will find it easier to dig up
12 information in a reading. Therefore, students' mastery of reading skills determines their
13 effectiveness when observing the teaching and learning process in schools (Meneses et
14 al., 2018; Ritonga & Rambe, 2022) . Especially in the world of education today, students
15 are required to think critically, the basis for critical thinking is the ability to read.
16 Therefore, scientific reading skills are very necessary. This is also supported by Ari
17 Nurwidyanti who stated that students' scientific reading skills and scientific literacy need
18 to be improved.

19 Scientific reading ability has several indicators. Indicators are research variables
20 used to indicate a condition, so they can be used to measure change. According to Siti
21 Fani, there are 3 indicators of scientific reading ability, namely, the ability to grasp the
22 meaning of words/phrases, the ability to grasp implicit and explicit meaning, and the
23 ability to make conclusions. Each indicator has relevance for use in research (Muliawanti
24 et al., 2022) .

1 There are various previous studies that discuss students' scientific reading
2 abilities. Experimental method research carried out by Alsa Sintia and Syahrul Ramadhan
3 using the CICR cooperative learning model on the ability to read and understand
4 descriptive texts showed that there was a significant influence from moderate to good
5 level (Sintia & Ramadhan, 2023) . Meanwhile, research conducted by Nurun Nazilah
6 using teaching materials based on *socio-scientific issues* showed that there was a
7 significant influence from very low to sufficient levels (Nazilah et al., 2019) . Differences
8 in achieving these levels can be influenced by differences in sample size, human resources
9 and teachers as facilitators. The research that has been carried out has had a positive
10 impact and produced good findings in learning.

11 Based on the results of *a preliminary study* carried out in class VII of MTs
12 Muhammadiyah 3 Yanggong, the results showed that students' scientific reading abilities
13 were still below the KKM set by the school of 75. The average score for students'
14 scientific reading abilities was 63.3. Students' scientific reading ability which is still
15 below the KKM is caused by several factors, such as teachers tending to use conventional
16 strategies so that students do not actively participate in groups. ⁴ Apart from that, based on
17 the results of observations, it also shows ⁴ that the supporting learning media used is less
18 interesting and innovative. As is known, currently Indonesia has entered the 21st century
19 era, so there is a need for innovation in learning to keep up with educational advances
20 that require students to think at a higher level. According to Zulfah, the solution that can
21 be implemented as an innovation is by using learning media with developments in science
22 and technology and in accordance with students' needs.

23 The learning media that will be used in this research is ² big-book learning media
24 based on scientific literacy, where ² the choice of learning media is based on the results of

1 written scientific reading ability tests and observations carried out at MTs
2 Muhammadiyah 3 Yanggong. Currently, students' learning achievement is affected
3 because students tend to be less interested in reading books that are thick and only contain
4 rigid information.

5 Based on PISA (Program for International Student Assessment), it shows that
6 students' interest in reading in Indonesia is ranked 72nd out of 77 countries in the world.
7 Students' low interest in reading can be caused by the title, content and presentation of
8 the book being less interesting. Therefore, there is a need for effective and innovative
9 books to attract students' interest, one of which is by using big-book learning media. Big-
10 book is a book with large size, writing and pictures containing stories with characteristic
11 content according to students' needs (Aulia et al., 2019; Joel, nd) .

12 In fact, research on big-book-based learning media in helping the learning
13 process, especially in reading activities, is very extensive and the research results show
14 that big-book-based learning media is feasible and useful for improving students' reading
15 abilities (Ritonga & Rambe, 2022) . Because it was considered effective, the big book
16 was chosen and used as a learning medium. This is supported by Aco Karumpa's research
17 which states that big-books are suitable for use in increasing understanding of a material
18 or subject and making the learning atmosphere more interesting because big-books are
19 designed innovatively and creatively. In this research, the big book is equipped with
20 indicators of scientific reading ability to support students' reading ability.

21 The use of big-book learning media is a solution that can be applied to help
22 students meet their needs related to scientific reading skills. Big-book is a story book with
23 special properties, both text and images, which allows teachers and students to carry out
24 collaborative reading activities. The book features colorful, repetitive and simple text

1 patterns. Big-book is a medium that allows teachers to choose content that suits the
2 learning theme. Apart from that, large book media is very suitable for use in early literacy
3 modeling (Aco Karumpa & Muhammad Dahlan, 2022) .

4 Students who have difficulty reading comprehension need special guidance from
5 their teachers so they need to use appropriate media to improve their reading ability and
6 understand what they read (Aco Karumpa & Muhammad Dahlan, 2022; Meneses et al.,
7 2018) . The use of big-book learning media can be used as an alternative learning media
8 for the learning process, especially in reading comprehension activities. Big-book
9 certainly has various advantages. The advantage of the big book is that through reading
10 the big book learning media you can connect the text with the way it is pronounced. This
11 is because in big-book learning media, apart from containing pictures, it is also equipped
12 with text that is larger in size, making it easier for students to connect the text by
13 pronouncing the words (Aulia et al., 2019; Diansyah et al., 2019; Mcnamara & Floyd,
14 2011) . As Aco Karumpa said, large media is suitable for use in early literacy modeling.
15 This is supported by Curtain and Daljberg regarding big book media, which states that
16 students can learn the ability to read repeatedly, and it is very suitable for use in the
17 classroom.

18 In implementing the use of big-book learning media, it can be supported by big-
19 book learning media based on scientific literacy. Scientific literacy is the ability to
20 understand and utilize scientific knowledge to solve problems in everyday life and obtain
21 new knowledge related to scientific phenomena (Sutrisna, 2021) . Scientific literacy
22 focuses on developing students' knowledge in applying scientific concepts significantly,
23 thoroughly, and being able to make decisions to overcome problems related to students'
24 daily lives.

1 The use of big-book learning media based on scientific literacy is one effort that
2 can be implemented to help students meet the needs of innovative learning media and
3 scientific reading skills in the 21st century. Big-book learning media can be
4 accommodated with scientific literacy in science learning because Learning media has a
5 role in developing scientific literacy for all dominant literacies, namely, scientific
6 competence, scientific knowledge, and students' attitudes towards science. With the
7 accommodation of scientific literacy-based learning media, students are able to learn
8 further and live in modern society which is currently influenced by developments in
9 science and technology. Apart from being accommodated based on scientific literacy, the
10 big-book learning media is designed with a scaffolding text display. This aims to attract
11 students' interest in dynamic and effective discussion involvement.

12 Based on the problems that have been described related to students' scientific
13 reading abilities and the learning support media used. Therefore, the researcher took a
14 research theme with the title "The Influence of Big-Book Learning Media Based on
15 Scientific Literacy on Students' Reading Ability: Scaffolding Text Skills and Reading
16 Comprehension". The aim of this research is to determine the implementation of learning
17 using scientific literacy-based big-book learning media in the learning process and to
18 determine the effect of scientific literacy-based big-book learning media on students'
19 scientific reading abilities.

2. Method (Word Style “Heading 1)

The type of research used to influence big-book learning media based on scientific literacy is research with a quantitative approach. The method used in this research is the *Quasi Experimental method*. The *quasi-experimental* method is an experiment that cannot control all aspects used, due to the fact that it is difficult to obtain the control class used in research. Therefore, the choice of this method is based on the research subject, because students are research subjects which makes it impossible to mix students in taking random samples. It could be said that it is difficult to get a random control group as in quasi-experimental research.

The research design used in this research is a *Nonequivalent Control Group design*. This research was carried out by providing treatment to two groups, namely the experimental group and providing a control group which was used as a comparison. The research design consisted of two groups, each of whom was given a *pre-test* and *post-test* and then treated using big-book learning media for the experimental class and using regular LKS books for the control class. The steps for the *Nonequivalent Control Group research design* can be seen below:

Table 1. *Nonequivalent Control Group Design*

The experimental group was the group that was given scaffolding text material and reading comprehension using scientific reading skills and using big-book learning media based on scientific literacy. The control group was the group that was given scientific reading lessons on scaffolding texts using LKS-based ordinary books.

The subjects used in this research were class VII students, using 2 classes consisting of 30 students. Sampling was carried out using *purposive sampling*, namely taking samples with certain considerations. Where the sample selection was based on the considerations of the science teacher where the research took place. This research was

conducted at MTs Muhammadiyah Yanggong which is located at Yanggong RT 04 RW 01 Jimbe Village, Jenangan District, Ponorogo Regency.

Figure 1. Illustrating the related research framework

In this research, an instrument in the form of a test was used. The type of test used is multiple choice questions in *the pre-test* and *post-test*. *Pre-test* is a type of test given before learning activities are carried out with the aim of finding out the extent of students' understanding of the material to be taught. Meanwhile, *the post-test* is a type of test given after teaching and learning activities to determine students' scientific reading skills based on the use of big-book learning media based on scientific literacy in class VII MTs Muhammadiyah 3 Yanggong. This test was carried out by students from the control group and the experimental group. The test refers to indicators of scientific reading ability. The indicators of scientific reading ability are as shown in the table below:

Table 2. Indicators of Scientific Reading Ability

Data collection techniques in this research were carried out in two ways, namely test and non-test. The data collection method in this research used pre-test and post-test instruments. This instrument has been validated by experts and has gone through the validity test stage of the items using the product moment correlation formula, reliability test using the Cronbach alpha formula, difficulty index test and item discrimination test. The data obtained was then analyzed using the ANCOVA test with the help of SPSS version 22 *for windows* to determine the differences after being given treatment

3. Result and Discussion (Word Style "Heading 1")

This research discusses the influence and implementation of big-book learning media on scientific reading skills based on scaffolding text skills and reading comprehension of class VII students at MTs Muhammadiyah 3 Yanggong. Data from

1 research on the use of big-book learning media in the experimental class and control class
2 will show the minimum, maximum, mean and standard deviation values for the *pretest*
3 and *posttest scores* . The following will be presented in the descriptive data calculation
4 table for the experimental class and control class in **table 3** . below this :

5 **Table. 3 Descriptive Statistics of Control Group Pretest and Posttest Scores**

6 In the descriptive statistical table it can be seen that there were 30 students who took part
7 in learning activities in the control group. In table 3, it can be seen that there is a decrease
8 in the average *pretest* and *posttest scores* . In obtaining the pretest score, there was a
9 decrease in the average score from 65.7 to 60, there was a closing of 5.7 from the average
10 of *the pretest* and *posttest* . In obtaining the minimum pretest score, there was an increase
11 in the score from 60 to 80 with a minimum increase of 20, while in the maximum posttest
12 score there was a decrease from 60 to 50 with a decrease of 10. There was a standard
13 deviation gain in each pretest and posttest score, namely 6.789106 for the standard pretest
14 value deviation and 4.548588 for the standard posttest value deviation.

15 **Table. 4 Descriptive Statistics of Pretest and Posttest Scores for the Experimental**
16 **Group**

17 In the descriptive statistical table it can be seen that there were 30 students who
18 took part in learning activities in the experimental group. In table 4, it can be seen that
19 there is an increase in the average *pretest* and *posttest scores* . In obtaining the pretest
20 score, there was an increase in the average score from 60.3 to 79.3, there was an increase
21 in the score of 9 from the average of *the pretest* and *posttest* . In obtaining the minimum
22 pretest score, there was an increase in the score from 40 to 80 with a minimum increase
23 of 20, while in the maximum posttest score there was an increase from 60 to 90 with a
24 decrease of 10. There was a standard deviation gain in each pretest and posttest score,

1 namely 10.9806517 standard deviation of pretest scores and 8.68344971 for the standard
2 deviation of posttest scores.

3 The comparison description is a comparison of measurement results between the
4 experimental group and the control group based on pretest and posttest scores. A
5 comparative description of the experimental and control groups based on pretest and
6 posttest scores will be presented in table form below.

7 **Table 5. Mean Measurement Results for the Experimental Group and Control**
8 **Group**

9 In table 5 for the experimental group, it can be seen that there was an increase in the
10 pretest and posttest scores from an average of 60 to 79.3, while the control group
11 experienced a decrease in pretest and posttest scores from an average of 65.7 to 60.3.

12 **Table 6. Ancova test results**

13 The ANCOVA test is a test that combines comparative and correlational tests.
14 ANCOVA is used to compare the dependent variable (Y), namely scientific reading
15 ability in terms of the independent variable (X), big-book learning media with scientific
16 literacy (X'). With the ANCOVA test, the role of the independent variable and the
17 dependent variable, both through prediction and comparison, can be carried out
18 simultaneously. This test uses SPSS 22 software with reference to covariance analysis if
19 the probability or significance value is <0.05 .

20 The results of the ANCOVA test are presented in Table 6, which is the result of
21 testing the effectiveness of the treatment given in the research experiments that have been
22 carried out. Treatment is said to be effective if there is a change in scores between the
23 experimental group and the control group. The reference for covariance analysis is if the
24 probability or significance value is <0.05 . Based on the results of the ANCOVA test
25 using SPSS 22 for Windows software above, it can be seen that the corrected model shows

1 a significance figure of $0.00 < 0.05$, meaning that the pretest and learning media
2 simultaneously have different impacts on learning outcomes. Intercept shows a constant
3 value with a significance of $0.00 < 0.05$ with a contribution to the impact of treatment
4 on learning outcomes (scientific reading ability). amounting to 53.6 percent. The pretest
5 significance value shows $0.00 < 0.05$, meaning the pretest has an impact on learning
6 outcomes (scientific reading ability). Learning media shows a significance value of 0.00
7 < 0.05 , meaning that big-book learning media based on scientific literacy has a
8 significant difference or influence on students' scientific reading abilities.

9 **Figure 2. View of the BigBook Cover**

10 **Figure 3. View of one of the contents of the Big-Book**

11 **Figure 4. View of one simple scaffolding text**

12 Several studies show that choosing the right learning media can influence student
13 learning outcomes. Where learning media is one of the supports in learning activities. The
14 early grade learning process requires media to convey lesson material optimally, because
15 early grade children have a short concentration span so they need support to attract
16 attention to what they are learning (Helwig et al., nd) . So by using media it is hoped that
17 it can improve students' characteristics and skills, especially in reading. Therefore, by
18 using learning media it is hoped that it can improve students' characteristics and skills,
19 especially in reading. Several things that can help in learning to read, namely (1) using
20 pictures as a tool, (2) asking questions, (3) showing the title and asking students to guess
21 it, and (4) reading sentences are not too long so they are easy to understand. students and
22 not confuse students. (Kasihani KE Suyanto. Yuniati, 2014). Although previous research
23 has been published regarding big-book learning media, little research has been conducted
24 on the scientific reading abilities of class VII students.

1 This scientific literacy-based big-book learning media uses material classification
2 materials and changes made in the experimental class, whereas in the control class they
3 do not use big-book based learning media but instead use regular books such as LKS.
4 Figure 2 above is a display of the cover of a big book based on scientific literacy. It can
5 be seen that the book is designed for class VII with material classification and changes.
6 Next, Figure 3 shows one of the contents of the big-book learning media. It can be seen
7 that the image shows the sub-chapters of the material that students will study. Meanwhile,
8 Figure 4 shows a display of one of the simplest scaffolding text contents in order to test
9 students' scaffolding text skills and reading comprehension.

10 Various studies originating from the fields of cognitive psychology and science
11 show that images have a positive effect on complex learning processes (Joel, nd) . Using
12 images to illustrate scientific concepts is very helpful because they can represent various
13 relationships and processes that are difficult to explain through linear verbal language (Jo,
14 2011) . This is in accordance with research regarding the details of the use of images and
15 learning from an interesting reading text which influences the negative effects of visual
16 representation which diverts the reader's attention from key ideas in the text (Garner et
17 al., 2009).

18 According to Tangen, readers who are faced with images that are interesting and
19 in line with their needs will perform better than those who are faced with images that are
20 incongruent (Tangen et al., 2011) . This is supported by Mayer and Jackson who say that
21 details that are interesting but not relevant to the content can distract attention or actually
22 increase the cognitive load of the task, thereby detrimental to learning. Therefore, it is
23 important to understand and adapt the images in the text so that they can specifically
24 encourage the formation of more meaning.

1 Apart from images and text or visual details, verbal sources in big-book based
2 learning media also influence reading comprehension (Mcnamara & Floyd, 2011) . Many
3 education experts state that big books are very good to use in early grades because they
4 help increase students' interest in reading (Helwig et al., nd) . Big books not only teach
5 students to read, but can also develop good attitudes and character and can increase
6 students' insight and knowledge. It is called a big book because its size is larger than
7 books in general. The big book contains simple sentences and pictures that illustrate the
8 contents of the sentences. Because the writing is large and standard for early grades, it is
9 much easier for students to understand the alphabet, letters and words (*179 P-ISSN 2338-*
10 *980X* , 2020) .

11 By using big-book media, it is hoped that it will trigger students' interest in reading
12 in the early grades. If in the early grades children enjoy reading, their reading ability will
13 also increase, and that means their learning achievement will also increase. In learning in
14 the early grades, reading skills need to be emphasized because it is a basic skill that
15 students must have in order to be able to support other subject matter. Beginning reading
16 is a stage in the process of learning to read for early grade elementary school students
17 which is expected to support children's abilities, including ability, skill, strength to try on
18 their own (Mahsun & Koiriyah, 2019) . For students in the early grades, improving skills
19 can be implemented through reading modeling, because apart from helping students speed
20 up and become fluent in reading, it is also considered important in the psychological
21 arena, students at that age need special attention and motivation from the teacher.
22 (Mahsun & Koiriyah, 2019) .

23 Based on research conducted by Maximilan Pfosta, it shows that normal readers
24 acquire physiological awareness of skills relatively quickly and fully master phonological

1 awareness tasks relatively early when starting reading (Pfof, 2015) .Children with below
2 average emergent literacy skills later achieve higher levels of word reading accuracy,
3 compared to children with verbal abilities and code-related skills (Rianti Rahmalia et al.,
4 2020) . Therefore, the way ideas are organized in big-book based learning media is used
5 to help improve students' reading comprehension, especially for students who have
6 relatively good skill mastery so that it can be beneficial for their understanding to be
7 maximized.

8 In short, this research shows that big-book learning media based on scientific
9 literacy is complex and enriched and designed at the thematic, discursive, textual and
10 lexico-grammatical levels. The literature review shows that selecting appropriate learning
11 media as supporting media in reading activities, such as big-book based learning media,
12 is often used to improve students' reading abilities. On the other hand, the scientific
13 reading abilities of class VII students with comprehension and literacy skills receive less
14 attention except from within the students themselves. Therefore, it is a good idea to
15 explore the effects of big-bokk-based learning media on the scientific reading abilities of
16 class VII students with comprehension and scientific literacy skills.

17 The difference in the average results of the pretest and posttest scores from the
18 experimental group and the control group can be seen in table 5. Table 5 shows the
19 average results of the *pretest* and *posttest* from the control group and the experimental
20 group based on students' scientific reading abilities which were analyzed from ability
21 indicators. read. In table 5 for the experimental group it can be seen that there was an
22 increase in the *pretest* and *posttest* scores from an average of 60 to 79.3, while the control
23 group experienced a decrease in pretest and posttest scores from an average of 65.7 to
24 60.3. Furthermore, table 6 shows the results of the ANCOVA test which produces that

1 the corrected model shows a significance figure of 0.00 - <0.05 , meaning that the pretest
2 and learning media simultaneously have different impacts on learning outcomes.
3 Intercept shows a constant value with a significance of 0.00 - <0.05 with a contribution
4 to the impact of treatment on learning outcomes (scientific reading ability). amounting to
5 53.6 percent. The pretest significance value shows 0.00 <0.05 , meaning the pretest has
6 an impact on learning outcomes (scientific reading ability). Learning media shows a
7 significance value of 0.00 <0.05 , meaning that big-book learning media based on
8 scientific literacy has a significant difference or influence on students' scientific reading
9 abilities.

10 The results of the ANCOVA test carried out showed that there was a difference
11 in the reading ability scores of students who used big-book based learning media and
12 students who did not use big-book based learning media. This is based on the results of
13 student work from the pretest and posttest given. The result was that the classes given
14 big-book based learning media or the experimental group experienced an increase in
15 grades after using this learning media. Table 6 is a table of ANCOVA test results by
16 comparing the pretest and posttest results in two groups based on scaffolding text skills
17 and reading comprehension according to indicators of scientific reading ability.

18 In short, this big-book based learning media has different or influential values
19 which is significant for the reading ability of class VII students in scaffolding text skills
20 and reading comprehension in accordance with the indicators of scientific reading ability
21 based on the results of the ANCOVA test that has been carried out. So, it can be said
22 significantly that big-book learning media based on scientific literacy can improve the
23 reading ability of class VII students as evidenced by the differences in scores produced

1 after using the media and also from the results of the ANCOVA test that has been carried
2 out.

3 In the experimental class, class VII students' comprehension abilities showed
4 better performance after using big-book learning media based on scientific literacy
5 compared to before using this media. This is based on researchers' observations when
6 learning activities took place using big-book media, where children read and looked at
7 pictures. When the teacher points to pictures or explanations in the big-book learning
8 media, namely scaffolding text, students can repeat the reading well. Students can repeat
9 the reading on the next page without the teacher repeating the words first, however, they
10 are assisted by the presence of pictures in the reading and also. So, pictures really make
11 it easier for students to read and understand reading (Meneses et al., 2018; Ritonga &
12 Rambe, 2022)

13 Despite its limitations, this research explains relevant implications for teachers in
14 choosing one of the learning media that can be used in learning. Although this research
15 shows a significant effect on the reading ability of class VII students. Things that must be
16 considered in the design of big-book based learning media are (1) image function, (2)
17 visual-verbal relationships, (3) explicit explanatory structure, and (4) lexico-grammatical
18 sources.

19 The results of data analysis also have implications for pedagogy based on the
20 reading ability of students from the experimental and control classes. This study provides
21 exploratory evidence regarding the practice of using certain learning media in teaching
22 and learning activities on students' reading abilities which requires the development of
23 not only general skills for understanding verbal language, but also general skills of visual
24 literacy strategies based on the epimetics of lesson material guidelines (Unsworth, 2014).

1 In addition, this research suggests that teachers must also have special resources, activities
2 and strategies to design science learning for low-skill students so that they do not fall
3 behind.

4 **4. Conclusion**

5 Based on the research results, it can be concluded that this big-book learning media based
6 on scientific literacy is also practical and effective for teachers to use in explaining the
7 material "Material Classification and Changes". Apart from that, big-book learning media
8 based on scientific literacy can be used as an alternative learning media for students'
9 scientific reading skills as well as scaffolding text skills and reading comprehension. Big-
10 book learning media based on scientific literacy has an influence on the scientific reading
11 abilities of class VII students. This is proven based on the results of the ANCOVA
12 analysis test which produces a corrected model showing a significance figure of $0.00 < -$
13 0.05 , meaning that the pretest and learning media simultaneously have different impacts
14 on learning outcomes. Intercept shows a constant value with a significance of $0.00 -$
15 < 0.05 with a contribution to the impact of treatment on learning outcomes (scientific
16 reading ability). amounting to 53.6 percent. The pretest significance value shows 0.00
17 < 0.05 , meaning the pretest has an impact on learning outcomes (scientific reading
18 ability). Learning media shows a significance value of $0.00 < - 0.05$, meaning that big-
19 book learning media based on scientific literacy has a significant difference or influence
20 on students' scientific reading abilities. Although this research shows a significant effect
21 on the reading ability of class VII students. Things that must be considered in the design
22 of big-book based learning media are (1) image function, (2) visual-verbal relationships,
23 (3) explicit explanatory structure, and (4) lexico-grammatical sources. More research is

1 needed to replicate this research with other scientific processes because this study only
2 explored data on seventh grade students.

3

4 **Acknowledgment**

5 Thank you to all parties who have helped complete this research. Especially to my parents
6 who always support me and my friends who always give me encouragement.

7

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1 **Table Lists**

2 **Table 1.** *Nonequivalent Control Group Design* (Page 10, Line 17)

3

Group	Pre-test	Independent Variable	Post-test
A	O1	X	O2
B	O3		O4

4 Information :

A : Experimental class

B : Control class

O1 : Pre-test of the experimental group before treatment with big-book learning media

O2 : Post-test of the experimental group after treatment with big-book learning media based on scientific literacy

O3 : Pre-test control group before treatment with regular book learning media

O4 : Pre-test control group after treatment with regular book learning media

5 **Table 2.** Indicators of Scientific Reading Ability (Page 11, Line 13)

No.	Indicator	Descriptor	Question Type	Question Number
1.	Ability to grasp the meaning of words/phrases	- Understand the meaning of words/phrases grammatically	Multiple choice	1
		- Estimate unknown meanings/phrases from previous and subsequent contexts.	Multiple choice	2
			Multiple choice	3
2.	Ability to capture implied	- Understand the written/unwritten meaning of the text.	Multiple choice	

	and explicit meaning,	- Explain the overall meaning of the reading, both express and implied.	Multiple choice	5
			Multiple choice	6
3.	Ability to make conclusions.	- Arrange statements in short, concise and clear sentences based on what you read.	Multiple choice	7
			Multiple choice	8
			Multiple choice	9
			Multiple choice	10

1

2 **Table. 3** Descriptive Statistics of Control Group Pretest and Posttest Scores (Page 12,
3 Line 5)

4

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Pretest	30	60	80	65.7	6.789106
Postet	30	60	50	60	4.548588
Valid	N	30			
(listiew)					

5

1 In the descriptive statistical table it can be seen that there were 30 students who took part
 2 in learning activities in the control group. In table 3, it can be seen that there is a decrease
 3 in the average *pretest* and *posttest scores* .

4 **Table. 4** Descriptive Statistics of Pretest and Posttest Scores for the Experimental Group
 5 (Page 12, Line 15)

6

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Pretest	30	40	80	60.3	10.9806517
Postet	30	60	90	79.3	8.68344971
Valid	N	30			
(listiew)					

7

8 In the descriptive statistical table it can be seen that there were 30 students who took part
 9 in learning activities in the experimental group.

10 **Table 5.** Mean Measurement Results for the Experimental Group and Control Group
 11 (Page 13, Line 7)

12

Measurement Stage	Group Mean Score		Description of Score Difference
	Control Group	Experimental Group	
<i>Pretest</i>	65.7	60.3	5.4
<i>Posttest</i>	60	79.3	19.3

13 In table 5 for the experimental group, it can be seen that there was an increase in the
 14 pretest and posttest scores from an average of 60 to 79.3, while the control group
 15 experienced a decrease in pretest and posttest scores from an average of 65.7 to 60.3.

16 **Table 6.** Ancova test results (Page 13, Line 12)

Tests of Between-Subjects Effects

Dependent Variable: PosttestBigbook

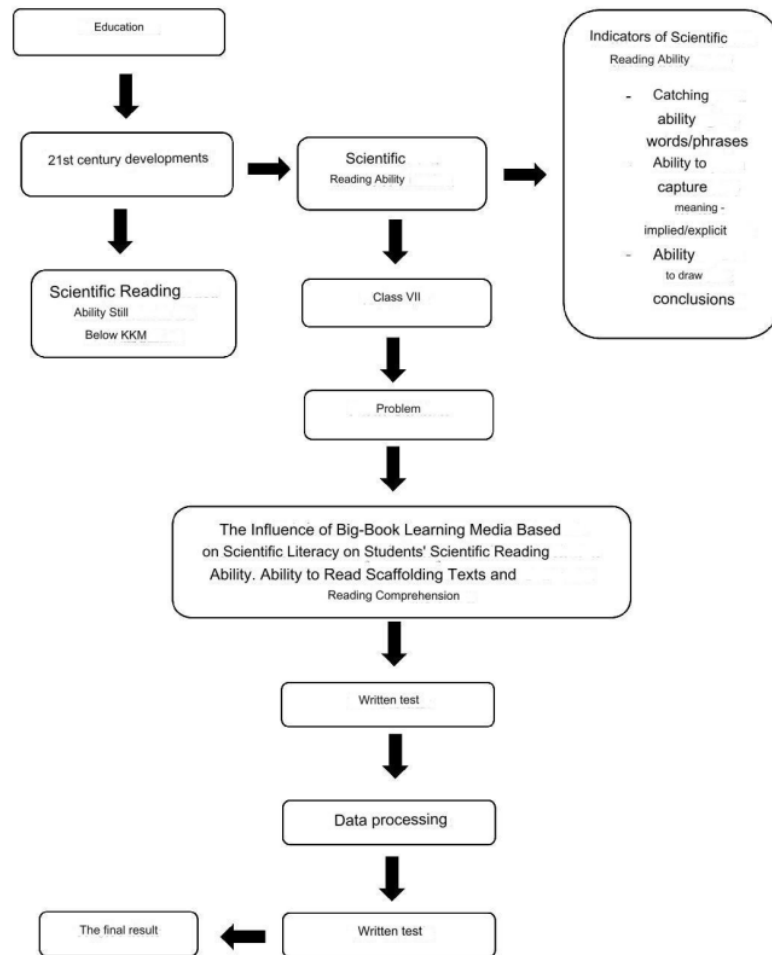
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	6439,779 ^a	2	3219.890	93,949	,000	,767
Intercept	2259.611	1	2259.611	65,930	,000	,536
Pretest	833.113	1	833.113	24,308	,000	,299
Group	6399.551	1	6399.551	186,723	,000	,766
Error	1953,554	57	34,273			
Total	299600,000	60				
Corrected Total	8393.333	59				

a. R Squared = .767 (Adjusted R Squared = .759)

1
2
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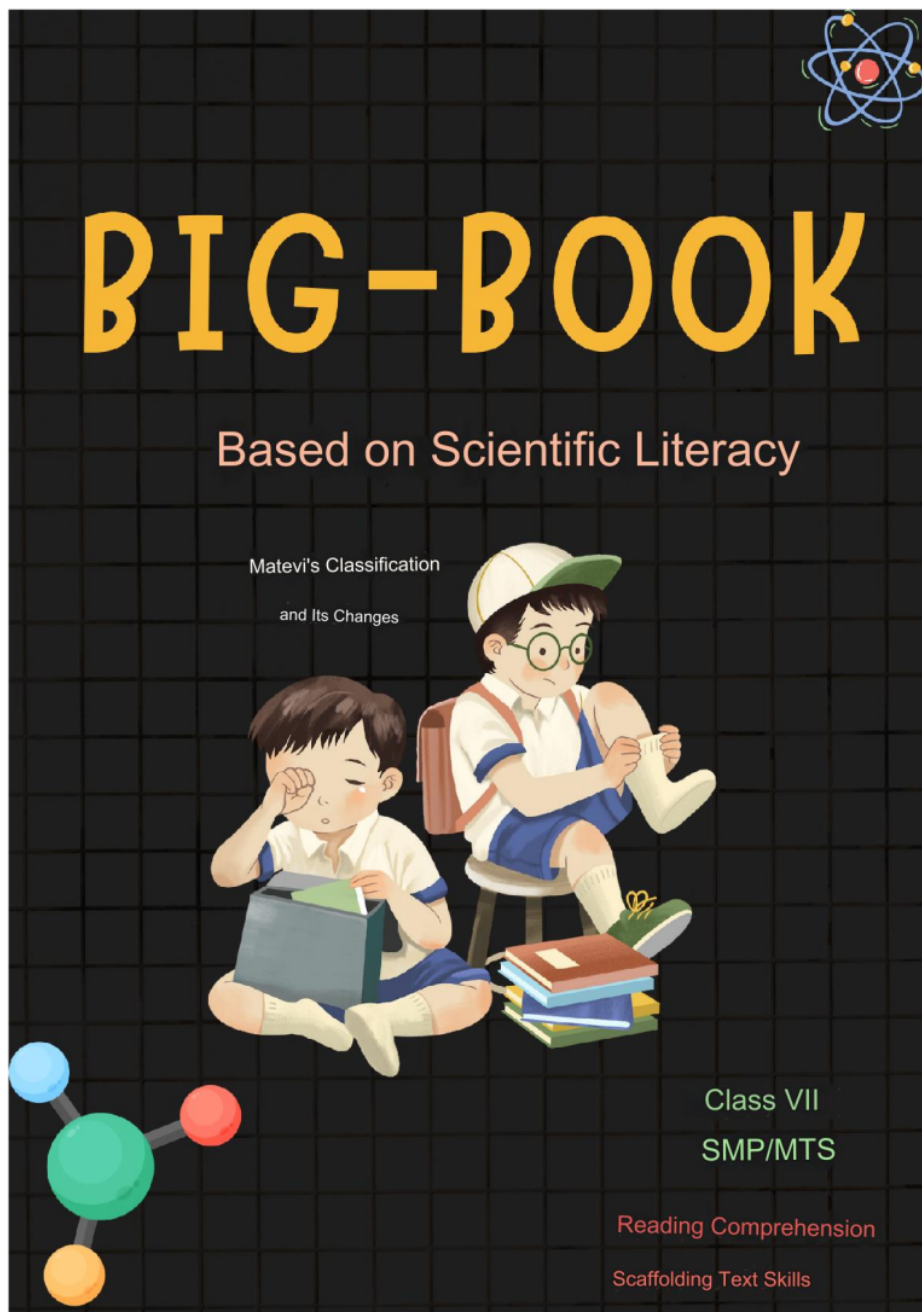
The ANCOVA test is a test that combines comparative and correlational tests. ANCOVA is used to compare the dependent variable (Y), namely scientific reading ability in terms of the independent variable (X), big-book learning media with scientific literacy (X')

1 **Figure Lists**

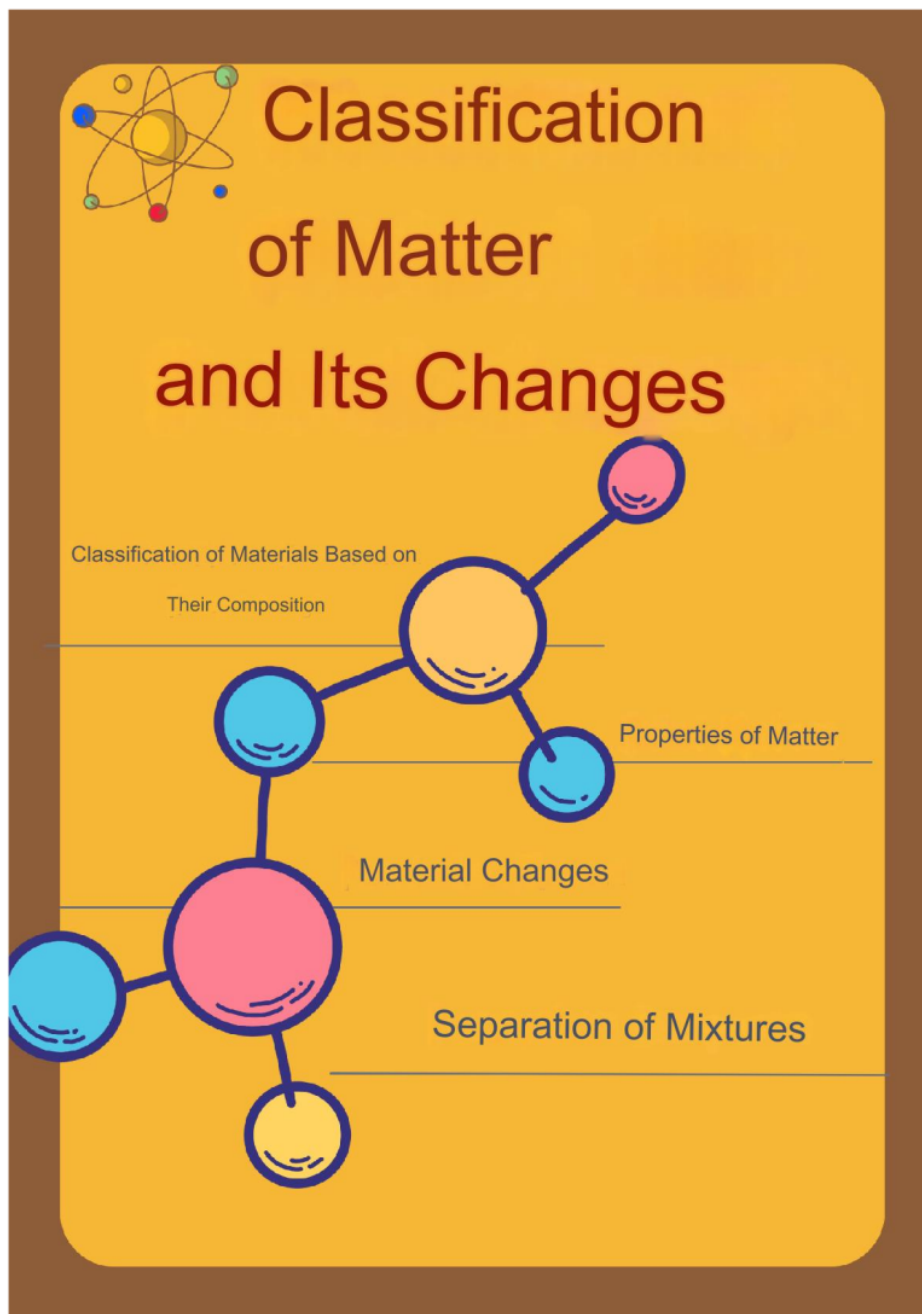


2

3 **Figure 1.** Illustrating the related research framework (Page 11, Line 3)



- 1
- 2 **Figure 2.** View of the BigBook Cover (Page 14, Line 9)



1

2 **Figure 3.** View of one of the contents of the Big-Book (Page 14, Line 10)

Physical Properties (States of Substances)



Wood (solid object)



Water (liquid)



Gas in balloons

1

2

Figure 4. View of one simple scaffolding text (Page 14, Line 11)

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