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**DEVELOPMENT OF PICTURE STORYBOOKS BASED ON SCIENTIFIC APPROACHES IN SCIENCE LESSONS CLASS V SDN 36 MATARAM ACADEMIC YEAR 2023**

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**Abstract :** *Based on the observation results at SDN 36 Mataram, several weaknesses were identified within the learning process. These include an emphasis on completing lesson materials rather than fostering understanding and meaningfulness of the subjects for students. Many students still engage in play during lessons, and a significant number of them hesitate to express their opinions due to a lack of confidence. The purpose of this research is to ascertain the development procedure of picture storybooks based on a scientific approach for fifth-grade Science lessons. This study falls under the category of research and development. It was conducted at SDN 36 Mataram, specifically in the fifth-grade classrooms. The research took place during the first semester of the 2023 academic year. The population of this study comprised all fifth-grade students at SDN 36 Mataram, while the sample included six students randomly selected from the fifth-grade class. This research employed the 4D model (define, design, development, and dissemination), focusing exclusively on the development phase with a sample of six participants (limited trial). The decision to choose six students as participants was based on specific reasons. Data collection techniques used in this study encompassed observation, documentation, and questionnaires. Both qualitative and quantitative analysis techniques were applied. This study involves the development of picture storybooks based on a scientific approach for fifth-grade students. The development of the scientific-based picture storybook follows the 4D development design, involving the phases of defining, designing, developing, and disseminating.*

***Keyword*** *: Development of illustrated storybooks, Science Education, Elementary Education, 5th Grade Elementary School Education, Understanding Scientific Concepts.*

**INTRODUCTION**

The main target of education is to improve quality human resources (Almasri, 2016). Quality human resources will be achieved if they have the ability, namely broad knowledge, mastery of knowledge engaged in and a professional mental attitude and have the spirit or motivation to achieve (Aspian, 2018). Every human being in his life must learn, be it in formal, non-formal or informal educational institutions (Triyono, 2019). In accordance with the Law on the National Education System Article 1 paragraphs 11 – 13 concerning pathways, levels and types of education, namely: Formal education which is also called school consists of three levels, namely basic education, secondary education and higher education. Non-formal education is an educational institution that complements formal education such as course institutions, training institutions, study groups and other similar educational units. The three institutions are commonly called tricenters of education which have their respective roles and functions (Law of the Republic of Indonesia No.20 of 2003).

Good communication between the three education centers will have a good impact on the process of fostering children's education (Amrullah &; Fanani, 2019). Education pursued in basic education will be the foundation for the next educational process (Hidayati et al., 2019). This was reinforced by Prastowo (Akbar et al., 2016) who explained that basic education has two main functions, namely 1) providing basic education related to the ability to think critically, reading, writing, arithmetic, mastery of the basics to learn science, and communication skills, and 2) basic education provides the basics for following the next level of education. One of the supports of basic education to run optimally is to instill the habit of reading from an early age (Purwani, 2020). The habit of reading is one of the keys to one's success in achieving science and technology (Wulandari, 2017) .

Science is a human effort in understanding the universe through precise observation on target, and using procedures, and explained by reasoning so as to get a conclusion. The nature of science, which is defined as the science of nature, which in Indonesian is called natural science, can be classified into three parts, namely: science as products, processes, and attitudes. IPA is also a procedure and IPA as a technology (Susanto, 2013).

In order for science learning to be maximized and liked by students, the implementation of learning must be fun and challenging. For this reason, the role of teachers is very dominant in implementing learning scenarios. Teachers must be able to raise the enthusiasm of students and make students feel experienced for themselves what is conveyed by the teacher, so that students feel challenged to explore the experiences they feel. Thus, children will experience a high sense of curiosity so that they are able to explore experiences in learning. So, it is hoped that students will feel happy to follow the learning. After students feel happy with learning, of course, students will optimize learning happily.

One of the learning approaches that is assumed to meet theneeds of student growth and development is the scientific approach. The scientific approach is learning that encourages children to perform scientific skills as stated in Government Regulation No. 65 of 2013 concerning 5M, namely: observing, questioning, reasoning, trying and communicating. The scientific approach is also called the scientific approach. The scientific approach is one of the latest approaches in the 2013 curriculum that is still being socialized and has not been widely applied in elementary school learning.

To support the results of science learning, one of the efforts made is by using learning media. In conveying information to students, teachers need learning media or material so that the information conveyed is easily understood by students. Based on observations at SDN 36 Mataram, it was found that there were several weaknesses in the learning process, including the learning process focused on completing the subject matter alone not on forming understanding and meaning of the subject matter to students, there were still many students who played when learning was in progress, speaking even most students rarely expressed their opinions because they did not have the courage to express an opinion. Another problem is also that teachers and students only use learning resources provided by the government, namely teacher books and student books even though the 2013 curriculum learning requires the use of various resources, media, and teaching materials that vary to support the learning process. This has an impact on the science learning outcomes of students, as evidenced by the low test scores of students, so that the scores obtained by students are still below the Minimum Completeness Criteria (KKM), where the science subjects at SDN 36 Mataram are 75.

Learning media such as picture story books at SDN 36 Mataram, especially class V, do not yet exist. This is what makes researchers want to try to conduct research by developing scientifically-based picture story books so that the learning delivered is better understood. (Farenda, 2018a) emphasized that picture story books are very suitable if applied in the learning process, because picture story books will be able to stimulate students' understanding of the meaning / intent of the stories that have been read. Through picture story books, children also find it helpful to be able to understand the content of reading by seeing pictures that support the story, besides that pictures can also provide relationships with the content of learning materials. However, the story book used in learning is not a story book sold in the market, but the story book in question is a picture story book that has been developed based on learning materials that are adjusted to the basic competencies in class V. (Irawan, 2020) Process activities in reading are needed so that students do not just read, but can foster a love of reading. This certainly will not contradict the learning approach in the 2013 curriculum, namely the scientific approach, reading activities can strengthen learning because if students like to read it makes it easier for them to learn other knowledge.

(Miranda, 2018) picture story books are books that feature images and text and both intertwine, both images and text alone are not enough to express the story impressively, and both need each other to complement and complement each other. Picture storybooks can also help learners in reading and increase their vocabulary. Picture storybooks align with improving learners' reading skills. It is realized that reading is very important, but what is more important is how they are able to choose the right reading book for students according to their development period.

Achild of primary school age 7 to 11 years falls into the category of concrete operational phase. In this phase students begin to think logically about concrete events, students can already sort and classify certain objects and situations (Hikmawati, 2018). The ability to remember and think logically students can also understand the concept of cause and effect rationally and systematically (Jury, 2018). Therefore, creative teachers will design learning activities that can meet developmental needs at that age.

The development of storybooks is expected to be one of the learning media that can increase the interest and learning outcomes of science students. This is an important goal so that students have a reading culture, can broaden their horizons and support the quality of students in the world of Education. (Chasanah et al., 2021) believes that picture storybooks have an important role in the world of education, especially at the elementary school level. Because picture story books are a familiar thing in children's lives. Picture story books are books that convey messages in two ways, namely writing that is clarified by illustrations, be it folklore, sagas or animal tales (fables). The images contained in the book serve as support as well as convey the content of the story.

**RESEARCH METHODS**

This research is a type of development research (*Research and Development*). What was developed in this study is a scientifically-based picture story book in grade V elementary school science lessons.

This research was carried out at SDN 36 Mataram in class V. The time of this research will be carried out is in the first semester of the 2023 academic year.

This research is a type of development research (*Research and Development*). What was developed in this study is a scientifically-based picture story book in grade V elementary school science lessons.

The population in this study was all students of grade V SDN 36 Mataram, while the sample in this study was 6 students from grade V SDN 36 Mataram taken randomly.

This research uses a 4D model (*define, design, development, and dissesmination*) which is only limited to the development stage with a sample of 6 people (limited trial), the reason for choosing 6 students is because according to Widodo (2015: 12) the stage of taking subjects per aspect in each group in development research is based on the heterogeneity of intelligence or learning outcomes of students. Small-scale trials of 6-12 subjects in each school because this study had limited research in one school only, 6 students from different levels of intelligence were taken.

The data collection technique used in this study is observation to observe the learning activities of students and obtain data and information on the learning process in grade V SDN 36 Mataram. The documentation used in this study is in the form of photos of teaching and learning activities, school profiles, learning media used and also student value data. The questionnaire in this study was used for material expert validation, media expert validation, teacher response, and student response.

Research instruments are used to make measurements with the aim of producing accurate quantitative data, therefore each instrument must have a scale.

The analytical techniques used in this study are qualitative and quantitative analysis techniques. Quantitative data analysis techniques are obtained from questionnaire responses to the assessment of material experts and media experts. Qualitative data analysis is analyzed logically and meaningfully as consideration for product revision.

**RESULTS AND DISCUSSION**

This research is a research on the development of picture storybooks based on a scientific approach for grade V elementary school. A scientifically-based picture storybook developed using 4D development design with stages *of define, design, develop,* and *dissemination*. The results of development at each stage in this research are as follows:

**Description of the** ***Define Stage***

At the *define*  stage, several stages are carried out, namely (a) conducting a needs analysis, (b) determining learning objectives, and (c) determining the learning content and sequence of storybook stories. In the early stages, researchers conduct needs analysis by conducting unstructured interviews, unstructured observations, and documentation. The interview was conducted with a grade V teacher of SDN 36 Mataram. The observation was conducted in class V of SDN 36 Mataram.

The results of interviews that have been conducted are known that teachers have never used picture book media in the learning process. Teachers usually use teacher and student books in the learning process. The teaching method used by the teacher is the lecture method by explaining the material in front of the class then students listen to the material delivered by the teacher. After finishing explaining the material, then the teacher will ask students to do the questions in the student book. This results in no two-way interaction between students and students, students with teachers, causing students to be less active in learning. This is irrelevant to the 2013 curriculum which emphasizes the activeness of students in the learning process. The 2013 curriculum also emphasizes the ability to search and discover for themselves the concept of the material they are learning.

After determining the next needs analysis is to determine learning objectives, at this stage the development of picture storybooks based on scientific approaches is adjusted to the objectives in the learning material. Learning objectives are described through several indicators contained in the teacher's book to be developed.

Next is to determine the learning content and sequence of scientifically-based picture story books, how to determine the learning content and order of picture story books, namely by adjusting to teacher and student books.

**Picture Book Display Based on Scientific Approach**

The picture storybook display consists of writing, pictures, and colors detailed as follows:

1. Writing

The type of font used for writing in picture storybooks based on a scientific approach is *sans comic.* The font size ranges from 12-18 pt.

1. Picture

Images in picture storybooks based on scientific approaches are not blurry and colorful so that they are clearer when seen by students.

1. Color
2. The cover of the picture book based on a scientific approach is dominated by turquoise green with a combination of black writing.
3. Each page of a picture book based on a scientific approach is dominated by blue in combination with white
4. Picture storybooks based on the scientific approach developed attract the attention of students by presenting colorful storybook images or illustrations.
5. So that picture story books do not cause a boring impression to see, picture story books based on scientific approaches are made in color with many pictures and illustrations along with writing.
6. The color of the writing is adjusted to the background color. For example, in a picture book based on a scientific approach, if the background color is light yellow, then the color of the writing is dark like black.

***Develop***  ***Stage Description***

**Product Manufacturing**

The next stage after designing a picture book based on a scientific approach is to make a picture book product based on a scientific approach. The product specifications of picture storybooks based on scientific approaches that have been made are as follows:

1. Picture storybook size: A4 (210 mm x 297 mm)
2. Paper Type: Ivory (cover) and art paper
3. Page Thickness: 47 pages
4. Picture storybook form : Bound by book

**Product Validation**

Product validation aims to test the feasibility of picture storybooks based on scientific approaches that have been developed. Validation of picture book products based on a scientific approach through two stages, namely as follows:

1. Material Expert Validation

Material expert validation aims to test the feasibility of the material in picture storybooks based on scientific approaches that have been developed. Material expert validation was carried out by grade V teachers of SDN 36 Mataram. The material expert in the research was Mrs. Evi Yanti Sulfana, S.Pd, a grade V teacher at SDN 36 Mataram. Material expert validation by filling out questionnaires on a scale of 1-4 related to several aspects of assessment, namely format, material / book content, story Recapitulation of assessment results from validators can be seen in the following table.

* Material expert validation (before revision)

Expert validation was carried out to see the feasibility of picture storybooks based on scientific approaches carried out by grade V teachers of SDN 36 Mataram, namely Mrs. Evi Yanti Sulfana, S.Pd. Material experts gave an assessment of picture storybooks based on scientific approaches.

**Table 1**

**Material expert test phase I (before revision)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Assessment Aspect** | **Indicators** | **Valuation** | **Criterion** |
| Format | 1. The size of the book is in accordance with the picture story book for grade V elementary school students | 3 | Agree |
| 1. Writing/text is clearly legible | 4 | Totally Agree |
| Material/ Content of the Book | 1. Materials vaporize science learning | 4 | Totally Agree |
| 1. Material in accordance with KI and KD | 4 | Totally Agree |
| 1. The material is in accordance with the theme | 4 | Totally Agree |
| 1. Use the default language according to the EYD | 4 | Totally Agree |
| Story | 1. The story corresponds to the title of the book | 4 | Totally Agree |
| 1. Stories relate to the daily lives of learners | 4 | Totally Agree |
| 1. The story contains Scientific steps | 3 | Agree |

From the table above, it can be seen the percentage of achievement of the feasibility of picture book learning media based on scientific approaches validated by material experts, namely as follows:

P = x 100%

= x 100%

= 88.8 %

In accordance with the results of the percentage of achievement of picture storybooks based on scientific approaches that have been validated, it is known that the feasibility rate of picture storybooks based on scientific approaches is 89%, which shows that picture storybooks based on scientific approaches are included in the category of very feasible to use but with revisions according to material expert advice, namely marking where scientific learning is located, pay attention to writing EYD and the presentation of material is good, Need to innovate more creatively.

* Material expert validation (after revision)

Picture storybooks based on validated scientific approaches are then revised to be refined. The results of the validation of phase II material experts are as follows:

**Table 2**

**Material expert test I phase II (before revision)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Assessment Aspect** | **Indicators** | **Valuation** | **Criterion** |
| Format | 1. The size of the book is in accordance with the picture story book for grade V elementary school students | 3 | Agree |
| 1. Writing/text is clearly legible | 4 | Totally Agree |
| Material/ Content of the Book | 1. Materials vaporize science learning | 4 | Totally Agree |
| 1. Material in accordance with KI and KD | 4 | Totally Agree |
| 1. The material is in accordance with the theme | 4 | Totally Agree |
| 1. Use the default language according to the EYD | 4 | Totally Agree |
| Story | 1. The story corresponds to the title of the book | 4 | Totally Agree |
| 1. Stories relate to the daily lives of learners | 4 | Totally Agree |
| 1. The story contains Scientific steps | 4 | Totally Agree |

From the table above, it can be known the percentage of achievement level of feasibility of picture book learning media based on a scientific approach after revision validated by material experts, which is as follows:

P = x 100%

= x 100%

= 97.22 %

In accordance with the results of the percentage achievement rate of picture storybooks based on scientific approaches after revision, it is known that the feasibility rate of 97.22% shows that picture books based on scientific approaches are suitable for use when learning.

The results of the material expert validation assessment I phase I d an II are displayed in the form of a diagram as follows:

1. Media expert validation

Media expert validation aims to test the feasibility of picture storybook learning media based on scientific approaches that have been developed. Media expert validation was conducted by Mrs. Evi Yanti Sulfana, S.Pd. Validation of media experts by filling out questionnaires on a scale of 1-4 related to several aspects of assessment, namely book cover, book content, images, book anatomy. A recapitulation of the assessment results from validators can be seen in the following table.

* Media expert validation (before revision)

Media expert validation was carried out to see the feasibility of picture storybook learning media based on a scientific approach. Media experts provide an assessment of picture storybooks based on a scientific approach.

**Table 3**

**Media expert test phase I (before revision)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Assessment Aspect** | **Indicators** | **Valuation** | **Criterion** |
| Book Cover | 1. Interesting story title cover color | 3 | Agree |
| Content of the Book | 1. Interesting story content | 3 | Agree |
| 1. Languages used according to EYD | 2 | Disagree Less |
| 1. Display of attractive images and writing | 3 | Agree |
| Picture | 1. Images or illustrations can convey the message / content of the image | 3 | Agree |
| 1. Clear drawings or illustrations | 3 | Agree |
| 1. Image size is consistent and seimbamg | 3 | Agree |
| Anatomy Books | 1. Clear page sowing | 3 | Agree |
| 1. Selection of color combinations with appropriate and attractive pages | 3 | Agree |
| 1. The combination of images, illustrations, and colors fits in each storybook | 3 | Agree |
| 1. The layout of the images and inscriptions is appropriate | 3 | Agree |
| 1. Font appropriate | 3 | Agree |

From the table above, it can be known the percentage of achievement rate of feasibility of picture book learning media based on scientific approaches validated by media experts, namely as follows:

P = x 100%

= x 100%

= 72.9 %

In accordance with the results of the percentage of achievement of picture storybooks based on scientific approaches that have been validated, it is known that the feasibility rate of picture storybooks based on scientific approaches is 73%, which shows that picture storybooks based on scientific approaches are included in the category worthy of use but with revisions according to the advice of media experts, namely consistent in writing the use of EYD and improving storybooks according to suggestions.

* Media expert validation (after revision)

Picture storybooks based on validated scientific approaches are then revised to be refined. The results of phase II media expert validation are as follows:

**Table 4**

**Media expert test phase II (after revision)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Assessment Aspect** | **Indicators** | **Valuation** | **Criterion** |
| Book Cover | 1. Interesting story title cover color | 4 | Totally Agree |
| Content of the Book | 1. Interesting story content | 4 | Totally Agree |
| 1. Languages used according to EYD | 4 | Totally Agree |
| 1. Display of attractive images and writing | 4 | Totally Agree |
| Picture | 1. Images or illustrations can convey the message / content of the image | 4 | Totally Agree |
| 1. Clear drawings or illustrations | 4 | Totally Agree |
| 1. Image size is consistent and seimbamg | 3 | Agree |
| Anatomy Books | 1. Clear page sowing | 4 | Totally Agree |
| 1. Selection of color combinations with appropriate and attractive pages | 4 | Totally Agree |
| 1. The combination of images, illustrations, and colors fits in each storybook | 4 | Totally Agree |
| 1. The layout of the images and inscriptions is appropriate | 4 | Totally Agree |
| 1. Font appropriate | 4 | Totally Agree |
| 1. The story contains Scientific steps | 4 | Totally Agree |

From the table above, it can be seen the percentage of achievement of the feasibility of picture book learning media based on a scientific approach after revision validated by media experts, which is as follows:

P = x 100%

= x 100%

= 97.9 %

In accordance with the results of the percentage achievement rate of picture storybooks based on scientific approaches after revision, it is known that the feasibility rate of 98% shows that picture storybooks based on scientific approaches are very feasible to be used when learning.

The results of the expert validation assessment of phase I and II material are displayed in the form of a diagram as follows:

**Field Trial Validation Data**

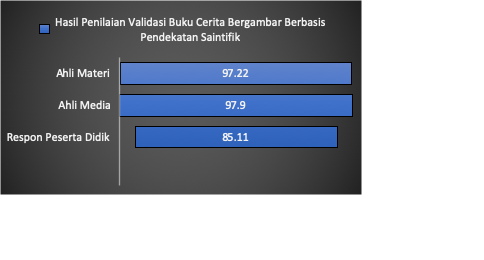
After passing the validation stage of media experts and material experts, researchers conducted field trials. Field trials were conducted on 6 grade V students of SDN 36 Mataram once.

**Table 5 Recapitulation of Small Group Trial Results**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Questionnaire No** | **Valuation** | | | |
| **1** | **2** | **3** | **4** |
| 1 | 0 | 0 | 4 | 2 |
| 2 | 0 | 0 | 3 | 3 |
| 3 | 0 | 0 | 4 | 2 |
| 4 | 0 | 0 | 0 | 6 |
| 5 | 0 | 0 | 3 | 3 |
| 6 | 0 | 0 | 3 | 3 |
| 7 | 0 | 0 | 3 | 3 |
| 8 | 0 | 0 | 5 | 1 |
| 9 | 0 | 0 | 5 | 1 |
| 10 | 0 | 0 | 4 | 2 |
| 11 | 0 | 0 | 4 | 2 |
| 12 | 0 | 0 | 4 | 2 |
| 13 | 0 | 0 | 0 | 6 |
| 14 | 0 | 1 | 5 | 0 |
| Number of frequencies | 0 | 1 | 47 | 36 |
| Number of scores | 0 | 1 | 141 | 144 |
| Total score | 286 | | | |
| Percentage value | 85,11% | | | |

Based on the results of student responses to picture storybooks based on scientific approaches in small group tests consisting of 6 students, a percentage of 85.11% was obtained which shows that picture storybooks based on scientific approaches are very valid to use.

The results of the percentage of research data obtained from the validation of media experts, material experts, and student responses are displayed in the form of diagrams as follows.



**Product Revisions**

The development of picture storybooks based on a scientific approach with theme 3 (healthy food), subtheme 3 (the importance of maintaining healthy food intake) was designed using *the Adobe Photoshop CS6* application.

**The Process of Developing Picture Books Based on a Scientific Approach**

**Define Stage**

*Define* is the earliest stage in this research. At this stage, several stages are carried out, namely conducting needs analysis, determining learning objectives, and determining learning content and the order of storybook stories. The initial stage in the definition process is to conduct a needs analysis at SDN 36 Mataram. This is intended to find out what students need in learning, especially in science learning. Needs analysis is carried out through unstructured interviews with class V teachers to find out what learning activities are carried out in schools and what learning media are used in carrying out learning activities. Learning will be more enjoyable if a teacher is able to use media that is interesting, varied, innovative, contextual, and that can be adjusted to the needs and conditions at school (Maunah, Siti: 2019).

From the results of interviews that have been conducted, it is known that teachers have never used picture book media in the learning process. Teachers usually use teacher and student books in the learning process. The teaching method used by the teacher is the lecture method by explaining the material in front of the class then students listen to the material delivered by the teacher. After finishing explaining the material, then the teacher will ask students to do the questions in the student book. This results in no two-way interaction between students and students, students with teachers, causing students to be less active in learning. This is irrelevant to the 2013 curriculum which emphasizes the activeness of students in the learning process. The 2013 curriculum also emphasizes the ability to search and discover for themselves the concept of the material they are learning.

The need for students for more innovative learning media in order to improve the quality of learning and student learning outcomes. The benefits of learning media are that it can foster student learning motivation because teaching will attract their attention more, the meaning of teaching materials will become clearer so that it can be understood and allow mastery and achievement of teaching objectives, teaching methods will be more varied, not solely based on verbal communication through words, students do more activities during learning activities, not only listening but also observing, demonstrating, performing directly, and acting out (Sudjana et al in Jalinus, 2016).

Based on this presentation, researchers developed learning media in the form of picture story books based on scientific approaches that will make students better understand learning, especially in science lessons to achieve learning goals to be achieved.

***Design* Stage**

The design of picture storybooks based on a scientific approach uses working techniques in making this scientifically-based picture storybook using 2 techniques. The first technique is manually and the second technique uses computer techniques. Sketches are drawn manually by hand then the sketches are *scanned* and colored on a computer using *Adobe Photoshop CS6*.

*Adobe Photoshop CS6*  application can help adjust the grammar, type of writing, choose the appropriate shape and color to create picture storybook learning media based on a scientific approach. Picture illustration and writing are two different media, but in picture storybooks they together form a blend. These images will make verbal writing more visible, concrete, and at the same time enrich the meaning of the text. So close the relationship between writing and images complements and complements each other (Nurgiantoro, 2018)

Some of the characteristics thatare listed in picture story books include (a) picture story books are concise and direct, (b) picture story books contain serialized concepts, (c) the concepts written can be understood by children, (d) the writing style is simple, (e) there are illustrations that complement the text(Farenda, 2018b)

According to the Big Dictionary Indonesian (2005) images are imitations of goods, animals, plants, and so on. While according to Hamalik (2003) images are everything that is realized visually in two-dimensional form as an outpouring of feelings or thoughts.(Aida, 2018)

**Development**

At the development stage, picture storybooks based on scientific approaches begin to be developed according to predetermined designs, after which picture storybooks based on scientific approaches that have been made will be validated by material experts and media experts. If picture storybooks based on scientific approaches are not as desired, then researchers need to revise according to what media experts and material experts respond. Based on the assessment of material experts as a whole, a percentage of 97.22% was declared "very valid" and an assessment from media experts obtained a percentage of 98% stated that "very valid". Data obtained in the form of quantitative data and qualitative data. Quantitative assessment data from questionnaires and qualitative data in the form of criticism and suggestions for revising picture book learning media based on scientific approaches.

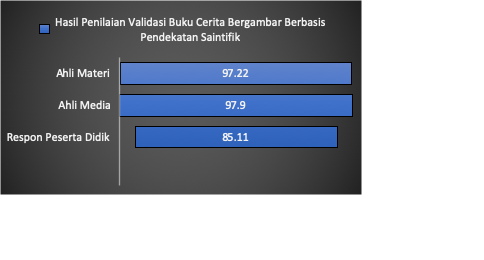
Criticism and suggestions from experts, namely media experts, are consistent in writing the use of EYD and improve picture storybooks according to suggestions such as enlarging the writing on each picture, adding images so that they are not too plain on each blank picture. Material experts suggest that by marking where scientific learning lies, pay attention to the writing of EYD and the presentation of material is good, it is necessary to innovate more creatively.

Furthermore, the trial carried out was a small-scale trial, which was only on six grade V students of SDN 36 Mataram. At this stage, trials are carried out to obtain students' responses to picture storybooks based on scientific approaches that have been developed. The student response questionnaire consists of 14 statements.

After validation and limited trials of picture storybooks based on scientific approaches, based on the results of validation and questionnaires of student responses, it was concluded that picture storybooks based on scientific approaches for grade V elementary school were valid (feasible) to be used in the learning process.

* 1. **Picture Storybook Eligibility**

Picture storybooks based on a scientific approach that have been developed based on the graphy, presentation, and feasibility of content in the eligible category. Validation was carried out by 1 class teacher of SDN 36 Mataram. The feasibility graph of picture storybooks based on scientific approaches for grade V elementary school can be seen in Figure 5.1



**Figure 1 Picture Storybook Eligibility Graph**

Based on the graph above, the feasibility of picture storybooks based on scientific approaches for grade V elementary school that have been developed is included in the category worthy of trial.

**CONCLUSION**

The process of developing picture storybooks based on a scientific approach for grade V elementary school includes the type of Research and Development (R&D) development with a 4D model, namely: (1) Define which consists of (a) conducting a needs analysis, (b) determining learning objectives, and (c) determining the learning content and sequence of storybook stories. (2) Design which consists of designing picture storybooks based on scientific approaches (3) Development, and (4) Dissemination.

The results of the analysis of picture book validation sheets based on a scientific approach for grade V elementary school were assessed by material expert validators with a percentage of 97.22% and media experts with a percentage of 97.9%

The results of the analysis of student responses using student response questionnaires of all aspects were obtained on average students responded well to picture storybooks based on scientific approaches for grade V elementary school developed at SDN 36 Mataram with a percentage of 85.11%.

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