Feasibility Module Guided Inquiry-Based Science in Class VI Bangun Bandar Elementary School 102062

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Abstract. This study is a research and development (Research and Development), which aims to determine the feasibility of the Thematic Module developed based guided inquiry). The methods used to analyze the data is qualitative descriptive technique disclosed in distribution and category rating scale scores. The development of research producing products that meet the eligibility requirements validation results expressed very decent material with a percentage of 92,5%, linguists declared eligible by the percentage of 83,02%, and design experts expressed very worthy of use in the field with a percentage of 91,17%. In this study the feasibility was also obtained from the questionnaire responses and the student after student wearing feel already products developed. The results of the student questionnaire responses guided inquiry-based thematic modules are also said to be feasible with a percentage of 77%. it can be concluded that guided inquiry-based thematic modules fit for use in the fourth grade primary school 102062 Bangun Bandar Academic Year 2019/2020.

Keywords: module, guided inquiry, feasibility

1. Introduction

Education can develop the ability and potential of the student and can manifest itself in accordance with the functions of personal and community needs. Accordance with the opinion [1] "The education that can support the future development is education that can develop the potential of students, so concerned is able to face and solve life's problems that it faces".

From the concept of education according to the law there are a few things we have to consider, education is a conscious effort planned, this means that education in schools is not a process that is carried out at random and speculative, but a process aimed at making everything do teachers and students are directed at achieving goals. Education is not merely trying to achieve learning outcomes, but how to get results or the process of learning that occurs in children. The education process is the ability of children have spiritual power of religion, self-control, personality, intelligence, noble character, and skills needed him, society, nation and state.

According to our records program for international student assessment (PISA), which is held every three years since 2000 to include 15-year-old students from 76 countries, both developed and developing countries. PISA assessment criteria include cognitive abilities, and skills of students in reading, math, and science. Obtaining the results of the PISA survey in 2013 stated that Indonesia ranks to 64. While the results of the PISA survey in 2015, Indonesia ranked 8th large bottom of 76 countries that participated in PISA [2]. Quality control of science in Indonesia is very sad and into the lower categories. Of course it is a

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concern all practitioners in education, especially in the subject of Natural Science in Primary Schools [3].

Various problems in the implementation of science education in accordance with the nature is very complex, because the ideas still continue to be donated to solve the problem. Science education are faced with problems of science teaching among devices capable of integrating various disciplines through specific themes, between concepts in the subjects with the concept of other subjects, so that teachers and learners have the provision of competence various disciplines.

Incomplete medium of learning in school can also inhibit learning activities. That situation will affect student learning outcomes. Skills in finding out is called with the skills of investigation or inquiry skills. Skills in finding out who owned the students should be developed by the teacher. One way to develop such skills is to make the learning process by using inquiry learning model. Inquiry is the activity of students in developing knowledge and understanding through scientific ideas, as scientists study the real world.

The process of learning by inquiry learning model means to position students to engage intellectually, so that students get the meaning of what they learned. Inquiry learning model aims to train students' skills in researching, explaining phenomena scientifically and solve problems [4]. The results of the study [5]. found that the inquiry-based learning have a positive impact, resulting in a complete and meaningful understanding, both the content and skills. However, there are several obstacles in the implementation of inquiry learning, including the necessary preparations should be more mature, instructional time should be longer, and teaching materials that facilitate inquiry-based learning is still limited.

Learning can be carried out independently by the student with the ability to apply inquiry using appropriate media. One source or learning tools that support independent learning by students that module. The module is one of the lessons devices are often used by teachers to help the learning process. Learning modules are the teaching materials arranged in a systematic and interesting that includes content, methods and evaluation that can be used independently to achieve the expected competencies [6]. Learning module is one form of teaching materials that are packed in a systematic and attractive so easy to learn independently.

Learning success relies heavily on the use of learning resources or materials selected. Learning resources and teaching materials suitable to meet the learning objectives, namely to motivate, attract attention, and stimulate students through the learning materials. One of the learning resources that can help meet the learning objectives are modules. Modules are teaching materials arranged in a systematic and interesting that includes content, methods, and evaluation that can be used independently to achieve a predetermined indicators. The module is indispensable as a medium of learning that allows students to understand the learning material and as a guide for teachers in delivering the learning materials. Other than that:

These problems certainly affect the learning outcomes of students. Where there are still many students who have not been thoroughly studied. The achievement of learning outcomes of students in science subjects are still many who have not reached the Minimum completeness criteria (KKM) were determined to be ≥70. Based on documentation in the sixth grade science teacher at SDN 102062 Bangun Bandar well known that out of 63 students in class VIA and VIB as many as 43 students (68,2%) have not completed the learning science and as many as 20 students (31,7%) completed the science teaching, the data showed that the learning outcomes SDN 102062 Bangun Bandar, IPA has not reached indicators of success. Mastery learning ideally every indicator is 0-100%, with a limit of 76% minimum ideal criteria.

Based on observations in class VI SDN 102062 Bangun Bandar, readily available device independent learning of the students that module. But there are still many students who stated that the modules are owned not based guided inquiry. The results of questionnaire analysis Elementary School sixth grade student needs 102062 Bangun Bandar shows that the average score of the percentage answering "yes" in agreeing to do the module development guided inquiry-based science learning, should be developed module guided inquiry-based science learning. In addition, the results of questionnaires on the results of the initial analysis conducted in SDN 102062 Bangun Bandar stated they had difficulty in understanding the competencies that exist in electric material as a learning resource and media used so far inadequate.

Based on these problems, the researchers are interested in developing independent learning device in the form of guided inquiry-based module that contains the material components of the electrical circuit. Is a guided inquiry learning activities that involve all students' ability to find and investigate a problem in a systematic, logical, analytical, so that with the guidance of their teachers can formulate its own inventions with aplomb [8]. So through guided inquiry activities all students the skills necessary to acquire, develop and apply the concepts, principles, laws and theories of science, whether it be mental skills, physical skills (manual) as well as social skills contained in the PPP can be felt by students and also increase the value of students science skills. [9] argues teaching materials is a module designed to help learners master the learning objectives and as a means of student learning independently and at their own pace. Through the use of the module, the students have learned time effectiveness because it does not have to wait for his friend that the speed varies.

Guided inquiry learning model will be presented in a module as described above that use inquiry based modules are not yet available due to the absence of the developed modules as a companion teaching materials.

Guided inquiry-based module is a module in which the covering material and assignments that facilitate students to find a concept based on a problem. Therefore, to facilitate independent learning and help students solve problems and build a new concept through the discovery and scientific thinking is necessary to do research on the feasibility of IPA modules in the fourth grade at subtheme invention that changed the world.

2. Research Method

This research was conducted in primary schools 102062 Build Airport in Class VI Academic Year 2019/2020. The timing of the studies were conducted in the second semester of the academic year 2019/2020. Subjects in this study were three validator expert (media expert, expert design and materials experts), and sixth grade students at SDN 102062 Bangun Bandar, where the number of fourth grade students were 20.

This type of research is the research and development (Research and Developmental).A development model which is used in this study is the ADDIE development model. ADDIE model of which is "the basic design stages of a learning system that is simple and easy to learn and this model, providing an extension of the ADDIE stage into a more detailed procedural guidelines are: analyze, design, development, implementation and evaluation".

in the research will be described data collection techniques will be selected in the conduct of research. The following data collection techniques used in this study is: interview, questionnaire and observation method.

To measure the validity of the science module that was developed, then compiled research instruments. The instruments developed in this trial are as follows: module validation

sheet student response questionnaire responses. And as for data analysis techniques namely the validity of the data analysis module, analysis of student questionnaire responses.

3. Results and Discussion

Some aspects that used to be a material product revision includes several components namely: the feasibility of validator expert (subject matter experts, linguists, and experts in the design), a subsequent will be also student questionnaire responses to determine the feasibility of the product if the product is good and decent in terms assessment of students after they finished taking and the inquiry-based study modules. Audiovisual media eligibility process is done by validating the product is by subject matter experts, linguists and experts Desain. Each student questionnaire responses as well as the acquisition of the validation results classified in the form of a percentage [11].

Based on the calculations of expert validation (content, language and design) and the student questionnaire responses, the resulting percentage adjusted to due diligence criteria presented in Table 1.1 below:

Table 1. Classification of Eligibility

levels of Achievement	Classification Valid	Classification Worth
84% < P <100%	very valid	very decent
68% < P <84%	valid	Worthy
52 %% < P <68%	enough Valid	Decent enough
36% < P <52 %%	less valid	Less worthy
20% < P <36%	Invalid	Not feasible

Feasibility Validator Expert Content

Validator matter experts on the development of inquiry-based modules in the sub-theme is a world-changing invention Dr. D, professor at the State University Postgraduate Medan. Assessment is carried out to obtain information that will be used to improve the quality inquiry-based modules on subthemes invention that changed the world. The results of the validation in the form of score ratings of the components of the module on the quality of learning materials that can be seen in table 1.2 below:

Table 2. Results of Validation Expert Content

No	Item Ratings	Value	
		P1	P2
1	Clarity of learning objectives	2	4
2	Statutes range of material	3	4
3	truth concept	3	4
4	Compliance with the curriculum	3	3
5	Compliance with open ended based	3	3
6	Statutes sequence learning materials	3	4
7	The depth of learning materials	3	3
8	preliminary Quality	3	4
9	The involvement and the role of students in learning activities	3	4
10	Encouraging students to answer in their own way	3	4
11	Quality of feedback	3	3
12	time presentation	3	4

No	Item Ratings	Value	
		P1	P2
13	Quality practice questions	3	4
14	Acceptable material and logical presentation	3	3
15	Ease of understanding the language	3	4
16	Display	3	3
17	Illustration	3	4
Amount		**50**	**62**
Percentage		**73,52%**	**91,17%**
Criteria		**V**	**SV**
Appropriateness		**worthy**	**very Decent**

The results of the validation by subject matter experts in the form of a score rating of the components of the inquiry-based modules and compatibility with the material on subthemes discoveries that changed the world in the first meeting reached a score of 50 with a percentage of 73,52% in the valid and feasible criteria tested with revision. The revision for validator experts are:

1) Objectives and indicators are made more operational learning
2) Language is good and right
3) Suitability activities with the available time activity with the time available
4) Activities to be presented clearly

After the repair is carried out at a second meeting votes by validator matter experts. Assessment at the second meeting has increased the value of about 62 by the percentage of 91,17% in the criteria is very valid and very worthy to try-out without further revision because, validator material experts say learning indicators have relevant statements and items about so it is fit for use as teaching materials. For more details can be described comparison value 1 meeting of expert validation and gathering material 2 on the image below:

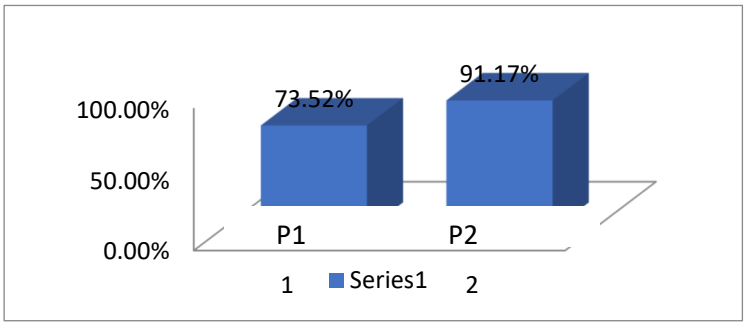

Figure 1. Comparison of Validation Matter Expert Meetings 1 and 2

Feasibility Validator Linguist

Validator linguists to the development of inquiry-based modules in the sub-theme is a world-changing invention Dr. WH professor at the State University Postgraduate Medan. Assessment is carried out to obtain information that will be used to improve the quality inquiry-based modules on subthemes invention that changed the world. The results of the validation in the form of score assessment of the use of language, spelling and sentence on the quality of the language used in the learning module which can be seen in table 1.3 below:

Table 3. Results of Validation Linguist

No	Item Ratings	Value	
		P1	**P2**
1			
2	effectiveness sentence	2	3
3	Clarity of language on material	3	4
4	clarity sentence	2	3
5	The attractiveness of the style of language	3	3
6	Kaida use the Indonesian is good and right	2	3
7	clarity letter	3	4
8	Symbols used	3	4
9	Clarity said orders / instructions	3	3
10	The language used is simple, straightforward and understandable young	2	3
11	Use the enhanced spelling EYD	2	3
12	Language according to the stage of development of students	3	4
13	Language can stimulate the imagination of students	3	4
14	Young understandable language students	2	3
Amount		**31**	**47**
Percentage		**62,5%**	**83,02%**
Criteria		**CV**	**V**
Appropriateness		**Decent enough**	**worthy**

The results of the validation by linguists in the form of a score against the assessment of language usage, spelling and sentence on the quality of the language used in the inquiry-based modules and its compatibility with the language used in subtheme invention that changed the world in the first meeting reached a score of 31, with a percentage of 62,5% is the criteria are valid and worthy enough trialed with revisions. The revision for validator experts are:

1) Sentences that are used unclear structure pattern that needs to be fixed
2) Simplify complex sentences so that the meaning of the sentence is clear and easy to understand
3) Guide PVEBI
4) Eliminate redundancy sentence elements
5) Notice the pattern draft suggestions Module.

After the repair is carried out at a second meeting votes by the validator linguists Rate at the second meeting has increased the value of about 47 with a percentage of 83,02% in the valid criteria and eligible for the try it out without revision, only validator linguists provide little input such as, improve slightly longer sentence structure, selection and data write sentences and note the aspect of meaning. For more details can be described comparison value 1 meeting of expert validation and gathering material 2 in Figure 4.2 below:

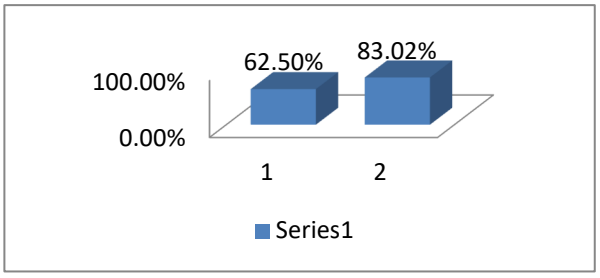

Figure 2. Comparison of Validation Linguists Meetings 1 and 2

Validator Feasibility Design Experts

Validator design experts on the development of inquiry-based modules in the subtheme is a world changing invention Dr. DS, professor at the State University Postgraduate Medan. Assessment is carried out to obtain information that will be used to improve the quality inquiry-based modules on subthemes invention that changed the world. The results of the validation in the form of score assessment of the use of images, colors and layout used in the learning module which can be seen in table 1.4 below:

Validation Results Table 1.4 Design Experts

No.	Item Ratings	Value	
		P1	P2
1	Dish systematic consistency in learning activities	2	4
2	keruntutan concept	3	4
3	Statutes selection of images	3	3
4	Statutes color selection in the image	4	3
5	Prints images and text clear	3	3
6	Student engagement in learning activities	4	4
7	Encouraging students to answer in their own way	3	4
8	The accuracy of the illustrations to the material	3	4
9	The presentation of the text, tables, images and attachments accompanied with references / sources of reference	3	4
10	The balance between text and illustration	3	4
amount		**31**	**37**
Percentage		**77,5%**	**92,5%**
Criteria		**V**	**SV**
Appropriateness		**worthy**	**very Decent**

The results of the design validation by experts in the form of score assessment of the use of images, colors and layout in inquiry-based modules and compatibility with subthemes invention that changed the world class VI SD at the first meeting reached a score of 31, with a percentage of 77,5% in the valid and worthy tested criteria revision. The revision for validator experts are:

1) Need revise of cover mainly the sub-theme and composition of colors
2) Consistency required font size and background on each sub-chapter and sub-chapter child
3) Book Antiqua font wear better for a reading material
4) Still need improvement funds have not been feasible to use.

After the repair is carried out by a vote at the second meeting validator design experts. Assessment at the second meeting has increased the value of about 37 with a percentage of 92,5% in the criteria is very valid and very worthy to try out without revision again, validator design experts also said topography component illustration and explanation pretty good material, in general, has been worth the module components used. For more details can be described comparison value 1 meeting of expert validation and gathering material 2 on the image below

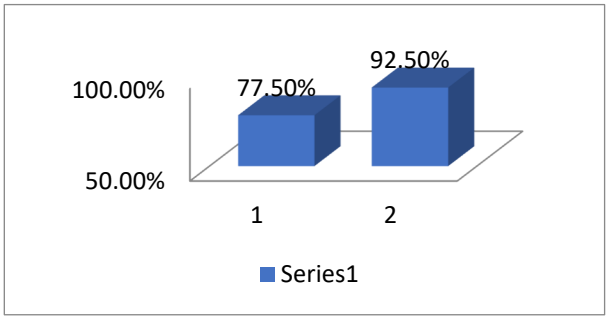

Figure 3. Comparison Design Validation Expert Meetings 1 and 2

Feasibility Student Questionnaire Response

The average assessment questionnaire responses students in Sixth Grade Elementary School 102062 Bangun Bandar Airportboth groups of small, medium and large there is an average value of 65,61 with a percentage of 77% were categorized Valid/Worth. For more details can be seen from Table 1.5 below:

Table 5. Assessment Questionnaire Responses of Students

No.	Trials	Average value	The average percentage
1	Small group	64.00	77.00%
2	Medium group	66.50	78.23%
3	powerhouse	66.35	76.55%
Average		**65.62**	**77%**

It can be concluded that the device pembelajatran form of inquiry-based modules to improve students' science process skills of sixth grade students based on the results of questionnaire responses have been considered valid/feasible to use.

4. Conclusion

Based on the formula, objectives, results and discussion of research and development on guided inquiry-based learning tools theme 3 at subtheme 1 'invention that changed the world "Elementary School sixth grade 102062 Bangun Bandar". Mentioned earlier, it can be concluded as follows:

1) The result of this research is an instructional video media products Scene VI in Bangun Bandar class. This learning product is feasible and valid for Class VI students of SDN 102062 Bangun Bandar by way of assessment, revision, and validation of several experts. This conclusion is drawn based on the analysis of experts consisting of a material aspect in this category rated valid with a percentage of 92,5%. Test linguists rated valid with a percentage of 83,02%. Test instructional design experts acquire 91,17% of valid values.
2) Student questionnaire responses for guided inquiry-based learning tools theme 3 at subtheme 1 'invention that changed the world "Elementary School sixth grade 102062 Bangun Bandar earned an average of 77% with the criteria of valid/feasible.

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