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## Optimization of the Science Approach Initially Classed Trough Lapbook Media

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**Abstract,** This study aims to increase the active role of students in learning through scientific approach through the use of lapbook media in early grade students. This type of research is experimental research. Research data collection using observation sheets, questionnaires and interview guides. This research is a Pre Experimental study using One Group Pretest-Posttest Design research design. The research instrument used observation sheets, questionnaires and interview guidelines. Observation sheets, questionnaires and interview guides are validated with media experts and learning experts. The results of the instrument development after validation by the validator in general the research instrument was declared feasible to use. The subjects of this study were 39 students in grade 1 of Pekanbaru Elementary School. 23 Women 16 men. Research data were processed using Microsoft Excel. Based on the results of data analysis, it is known that the use of Lapbook media increases the active role of students in the learning process by using a scientific approach. Lapbook media increases the ability to observe 75%, to ask 45%, reason 54%, to try 51% and communicate 51%. Thus lapbook media can increase the effectiveness of Scientific Approach in early classroom learning

**Keywords:** Scientific approach, lapbook

### 1. Introduction

The 2013 curriculum is a curriculum that was designed with optimism to invite all education practitioners to contribute to the learning process that emphasizes modification of the pedagogic dimension through activities of observing, asking, reasoning, trying and communicating. Daryanto (2014: 51) revealed that the scientific approach facilitates the provision of understanding to students with scientific steps. It can be said that the scientific approach is oriented towards the success of teachers in achieving learning goals through the five M. Some research results show that in traditional learning, there is a retention of information from teachers by 10 percent after 15 minutes and the acquisition of contextual understanding by 25 percent. In learning based on a scientific approach, information retention from teachers is greater than 90 percent after two days and acquisition of contextual understanding is 50-70 percent.

According to Piaget, elementary school students in the early grades, aged 6-7 years, are included in the pre-operational category which is in the intuitive stage, and egocentric and interested in the fantasy world. Tend to imitate and be able to interpret his fantasy, able to tell stories about fantastic things. Not attached to reality so talking with chairs, animals, plants and others becomes something normal. Understanding of an object is done by integrating the concepts they already know and connecting them with the new object (assimilation), utilizing the concepts that are in their minds in carrying out the interpretation (the process of accommodation / utilizing).

Based on interviews conducted with several early grade teachers in SD 37, 184 and 147 Pekanbaru, it is known that the application of the scientific approach in the initial class has not been carried out

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properly due to: 1) grade 1 students have not been able to interact with the scientific approach. 2) The unavailability of learning media that support learning with a scientific approach. 3) students are not actively involved in learning. This problem is the same as in other regions, research conducted by Muliatina (2016: 129) only 50% of teachers were effective in implementing a scientific approach, due to the lack of teacher motivation to implement the approach, and the unavailability of supporting media. Suparlan (2015; 51) scientific application has not been maximized, because 1) no suitable learning media is available. 2) limited time allocation for learning in each sub-theme. 3) limited costs for developing media. 4) students lack an active role when learning.

With problems as above, teachers and learning practitioners are required to find a way that can be modified to facilitate the achievement of learning objectives. The ability of students to present their fantasies, tell stories about something fantastic, be able to construct their understanding and reformulate it in a new form is a potential that must be made a part in dealing with learning. With the results of these studies strengthen the confidence of researchers to optimize the scientific approach through the use of lapbook media. Lapbook media in essence is visual media created by combining text, images and activity sheets arranged in a foldable field. But the arrangement and arrangement are layered like computer folders. The term "Lap Book" was first coined by Tammy Duby (2006), a homeschool teacher and writer from Virginia, USA. Tammy named this media with a lapbook because all learning material can be put into a "book" that fits in the lap (Hamilton) Annadya Andryana (2017), Lap book is a visual media that contains a package of learning materials arranged by uniting a number of small activities into a learning integrated, the results of which are presented in the form of documentation that is stored in the form of a folder. Lapbook gives teachers ease in developing learning and encourages students' active participation in learning. All materials have been arranged and can be reached by the teacher without having to move.

Likewise with students, through the scenario that has been compiled in the lapbook students can contribute in every learning activity undertaken by the teacher. Related to lapbook media as visual media Levie and Lents (1982) mentioned that there are four functions of visual learning media, namely: 1) Attention function, 2) Affective function, 3) Cognitive function and 4) Compensatory function. Based on the explanation above, it should be suspected that the use of lapbook media can support the learning process with a scientific approach carried out through scientific activities by observing, asking, reasoning, trying and communicating Machin (2014: 580) says teachers must be creative in organizing learning with a scientific approach to be implemented well and meaningfully.

## **2. Research Methodology**

2.1 Research Sites, This research was conducted in class I of the Elementary School No. 147 Pekanbaru.

2.2 The sample of the research was grade 1 students of Pekanbaru Elementary School 147 Pekanbaru with 39 students consisting of 23 women and 16 men.

2.3 Research Design

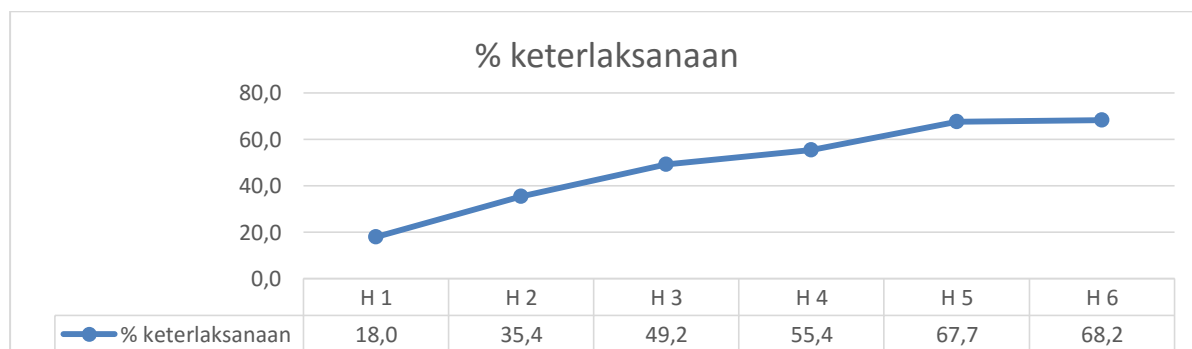
This research is a survey research in the category of cross sectional survey which aims to find out whether the use of lapbook media can improve the optimization of the application of a scientific approach to learning in early grades. The study was conducted by looking at the percentage of the feasibility of a scientific approach using lapbook media. Data collection instruments using observation sheets, and interview guidelines that have been validated by expert judgment. Observational data were analyzed descriptively from the results of matching observations with the steps proposed by Ridwan (2004: 71-95) as follows: 1. Counting the number of respondents and each aspect or sub-variable. 2. Recap the number of respondents. 3. Calculate the average. 4. Calculate the percentage using the formula:  $DP = \frac{n}{N} \times 100\%$ . DP = Descriptive Percentage (%), n = Empirical score (Number of respondents), N = total number of respondents. To determine the



**Table 2:** Comparison of Classical Activities of Classical Male and Female Students in Each Study

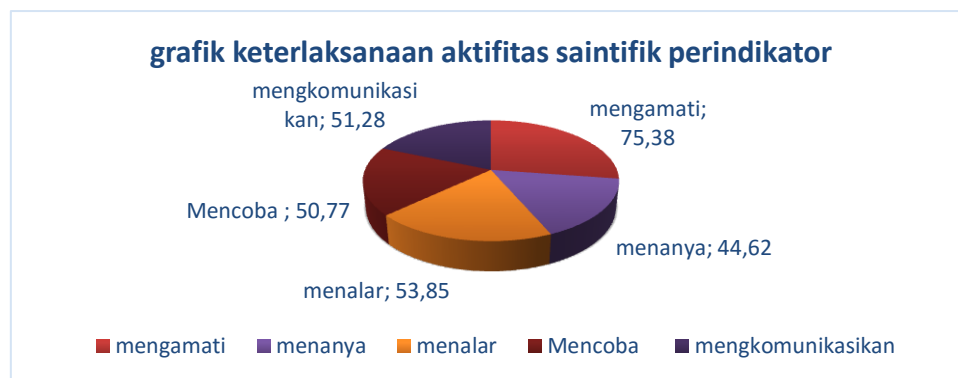
No	Activity	Percentage D 1		Percentage D 2		Percentage D 3		Percentage D 4		Percentage D 5		Percentage D 6	
		F	M	F	M	F	M	F	M	F	M	F	M
1	Observe	23.1	12.9	33.5	20.6	41.1	30.9	53.8	28.2	55.9	33.1	56.7	28.3
2	Ask	5.0	0.0	15.5	15.5	14.3	25.7	30.9	18.1	28.3	25.7	20.6	33.4
3	Reasoning	17.9	5.1	20.6	15.4	30.6	20.4	30.9	23.1	25.8	36.2	36.1	30.9
4	Try	5.2	7.8	12.7	15.3	15.4	25.6	20.6	28.4	38.7	28.3	38.9	31.1
5	Communicating	10.4	2.6	20.3	12.7	28.1	17.9	22.8	20.2	33.5	33.5	38.7	28.3

From the table above it can also be seen the percentage of the implementation of the scientific approach before and after using Lapbook media, in the first learning it is assumed to be the application of the scientific approach undertaken by the teacher while implementing the 2013 Curriculum. Student contribution is 18% (low category). After learning was carried out 5 times with the help of lapbook media, the scientific process increased to 68.2% with a high category. It means the application more scientific process (higher) after using lapbook media. This can be seen in Graph 3.1 below:



**3.1 Graph:** Percentage of Execution of Scientific Attitudes At Each Meeting (Learning)

Furthermore, based on scientific approach indicators, observing, questioning, reasoning, trying and communicating, the highest percentage of activities found in observing activities was 75.38% with a high category. The activity of asking is only at 44.62% with a low category. For reasoning indicators, try and communicate get a percentage of 50.77 - 53.85 with a high category. For more details can be seen in the following graph:



**3.2 Graph:** Percentage of Execution of Scientific Attitudes Per Indicator

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#### 4. Discussion

The Scientific Approach was introduced as an educational method at the end of the 19th century, where the emphasis of the educational process was through investigation in accordance with scientific facts (Hudson, 1996; Rudolph, 2005). The scientific approach is learning "doing science". Through doing science, teachers will more easily develop material according to the level of students' abilities and optimize the learning process through an inquiry process to get measurable learning (Maria Varelas and Michael Ford, 2008: 31). Permen No. 65 of 2013, learning objectives include the development of the realm of attitudes, knowledge, and skills that are elaborated on in each education unit. The three competency domains have different meanings. Attitudes are obtained through the activities of "accepting, executing, appreciating, experiencing, and practicing". Knowledge is gained through the activities of "remembering, understanding, applying, analyzing, evaluating, and creating". Skills are obtained through the activities of "observing, asking, trying, reasoning, presenting, and creating". The three domains are implemented through the media lapbook and scientific approach through observing, asking, reasoning, trying and communicating. Fauzi (2018) states that each child has their own way of interpreting and adapting to their environment (cognitive development theory). According to him, every child has a system of concepts that exist in the mind as a result of understanding of the object. This is where the media lapbook carries out its role in providing understanding of subject matter through the process of assimilating the media with concepts that students have. Students can use these concepts to interpret objects. The scientific process, carried out in learning by finding (method of inquiry) through lapbook media that has been designed for one sub-theme of learning based on observable facts. According to Umar (2014) the media functions to focus the attention of students and to synchronize space and time in understanding learning material. This is because in the lapbook media, Tummy Dudy (2006) said that in the lapbook media information is arranged in a sequential way in the form of pictures, materials and exercises arranged systematically in a folder or sheet that can be opened in the lap and opened together by the teacher and students in learning process. The availability of material for 6 days of learning on one media, shortens students' understanding time because the material will always be called the teacher and is observed simultaneously by students. This happens because the scientific approach facilitates learning activities by containing a series of collective activities from observation, reasoning and experimentation, which ends with communicating. The effectiveness of the use of lapbook media in optimizing scientific approaches can be seen in research findings which show that the learning process meets scientific criteria as evidenced by the facts of the study: (1) observation process with a high category, (2) reasoning activities, trying and communicating with the percentage high. The questioning activity is still in the low category because it is caused by low grade students who have not been able to concretize their thoughts through words (Sugiarti: 2015). The findings of this study are in accordance with the expectations of students who will have a love of objective truth, it is not easy to believe things that are not rational, curious, not easy to make prejudices, always optimistic (Kemendikbud, 2013: 141). The results also prove that the involvement of students in learning with a scientific approach to traditional learning, only reached 18%. After learning 5 times there was an increase in student involvement by 45% to 68.2%. The scientific approach also increases the ability of students to observe, ask, reason, try and communicate with the percentage of 44.62% - 75.38%.

#### 5. Conclusion

The use of media in learning with a scientific approach is very helpful in concretizing abstract concepts conveyed by the teacher. Through student activities students are able to explore with the help of the media to bridge the limitations of time and range. Lapbook media is media that consists of text, visual data, activity sheets arranged for one sub-theme of learning is very representative of learning in early grades that are still familiar with pictures and play activities. The teacher's skills in using media must

also be taken into consideration in the application of a scientific approach in the early grades. This can be used as a foothold for further research.

## 6. Thank you.

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