

Need Analysis of Students Worksheet Based on MIKiR at Themes Always Save Energy of Fourth Grade of Primary School

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Abstract: This study aims to a) describe the level of need analysis of student worksheets based MIKiR on the theme of always saving energy in grade IV of primary school and b) describing the subject matter needed by students in accordance with the 2013 curriculum. This research is part of research and development namely stage of needs analysis. The approach used is a qualitative approach. The study was conducted in five partner schools in the Primary Teacher Education, Faculty of Teacher Training and Education, Jambi University, namely Primary School 55/I Sridadi, Batanghari, Mendalo, Primary School 211/IX, Muaro Jambi, Primary School 76/IX Mendalo, Muaro Jambi, Primary School 197/IX Pematang Gajah, Muaro Jambi, and Primary School 236/IX Aur Duri, Muaro Jambi. The research subjects were 11 class teachers. Research instruments for collecting data are questionnaires and interviews. The results of the study are a) the level of need analysis of student worksheets based MIKiR obtained is in great need with a percentage of 85%. b) the appropriate material obtained results of 94.3% and the material that wants to be in the student worksheet based MIKiR is an experiment, game, and information that has not been found in the 2013 curriculum book.

Keywords: *need analysis, students worksheet, MIKiR*

INTRODUCTION

The 2013 curriculum is a set of learning that requires students to compile learning experiences by working scientifically Abidin (2014). Therefore the 2013 curriculum was implemented based on the scientific approach. Another distinctive feature of the 2013 curriculum is the theme-based learning. Thematic learning and scientific approach will run smoothly if important components to support the learning process are fulfilled. One of the another supporting components is teaching material. Learning tools that can be used as tools containing material, how to evaluate, and methods that are designed systematically so as to achieve the expected competence is a definition of teaching materials (Nurdyansyah, 2018). The creation of an environmental atmosphere allows students to learn by using instructional materials in the form of a set of materials that are systematically arranged both in writing and unwritten (Prastowo 2013: 297).

According to Prastowo (2013: 303) teaching materials have several types, one of which is in the form of student worksheets. Student worksheets are one of the teaching materials that have topics of learning, summaries and instructions on the implementation of learning tasks that require students to complete activities in order to achieve the potential for emergence (Prastowo, 2012: 204). Student worksheets become a means to facilitate learning activities because of that device design Good thematic worksheets are needed so that the learning process is achieved which encourages students to take an active role. Prastowo (2013: 270) says that the function of student worksheets is minimizing teacher-centered to be student-centered which makes it easier for students to understand learning material.

In line with the function of the student worksheet, Permendikbud No. 103 of 2014 contained the demands that must be achieved in the 2013 curriculum, namely emphasizing students to be more active in the learning process. Learning through student worksheets also impacts on the emotional state and feelings of students in completing the task given (Casey, Carroll, Crowley, 2018). Students are more enthusiastic about working on experimental activities and questions if there are clear work steps. Mastery of material and learning outcomes of students can improve through student worksheets (Toman, 2013). Student Worksheets focus on achieving the competencies expected through innovative, constructive, and centered learning to students Roaheti, 2009). One of the categories of good student worksheets is the worksheet of students who are able to help teachers in implementing teaching material and helping students to solve problems of learning independently (Basuki and Wijaya, 2018). In addition, good student worksheets are able to accompany students to meet all the demands of the 2013 curriculum. Student worksheets based on the MIKiR approach (Experiencing, Interaction, Communication, and Reflection) are expected to be able to fulfill these demands.

The MIKiR approach is an approach used in learning activities to improve the quality of education that has been implemented in primary schools in collaboration with the Tanoto Foundation. The steps of the MIKiR approach are able to make students grow habits to continue learning and process in improving their abilities. The steps of the thinking approach are: 1. Experiencing activities by observing and conducting experiments, 2. Interaction activities by discussing to solve problems together with groups or in pairs, 3. Communication by conveying the results of the discussion. 4. Perform reflection activities (Modul Praktik Baik, 2018:7).

MIKiR observation activities can be carried out as follows: a) EXPERIENCING (M): doing (doing) and/or observing when the learning process takes place. b) INTERACTION (I): the process of exchanging ideas between two or more people. c) COMMUNICATION (Ki): the process of conveying ideas/thoughts or feelings to someone else. d) REFLECTION (R): activities to look back on the learning experience and take lessons (lessons learned) so that learning is better in the future (Modul Praktik Baik, 2018). The concept of learning MIRIR is very compatible with the value of life-long learning that familiarizes students to learn and process in improving their abilities (tanotofoundation.org).

The MIKiR approach implemented in the learning process is able to answer the challenges of the 21st century (collaborative, creative and innovative, communicative, critical thinking and problem solving) and the 2013 curriculum that uses the 5 M approach (observing, trying, asking, reasoning, and communicating). The advantages of the learning process that applies the MIKiR are as follows:

- a) Students are directly involved in learning, active students, centered on students
- b) Build self-confidence because students collaborate and interact with group friends and partners and present it to the front of the class
- c) Building the creativity and innovation of students because students must complete the worksheets given
- d) Mastery of the material of mature students because they are asked again before the lesson is finished.

The purpose of the study is to a) describe the level of need for Students' worksheet bades MIKiR on the theme of always saving energy in grade IV of primary school and b) describing the subject matter needed by students in accordance with the 2013 curriculum.

RESEARCH METHOD

This research is part of a grand research that uses the ADDIE research and development model (Analysis, Design, Development, Implementation, Evaluation). The stages to be explained in this paper are the analysis phase. Method of researcch is qualitative approach. This research was conducted in class IV in five schools in Muaro Jambi and Batanghari districts. The primary school that is the subject is the primary school partner Primary School Teacher Education, Faculty of Religion and Education, Jambi University, namely Primary School 55/I Sridadi, Batanghari, Mendalo, Primary School 211/IX, Muaro Jambi, Primary School 76/IX Mendalo, Muaro Jambi, Primary School 197/IX Pematang Gajah , Muaro Jambi, and Primary School 236/IX Aur Duri, Muaro Jambi. Sources of data in the study were obtained from research instruments in the form of questionnaires and interviews with the needs of developing student worksheets and material in accordance with students.

RESULTS

Needs for MIKiR Student Worksheets

The results of the level of need for student worksheets were obtained from questionnaires and interviews from 11 grade IV teachers in partner elementary schools. Primary School 55/I Sridadi, Batanghari, Mendalo, Primary School 211/IX, Muaro Jambi, Primary School 76/IX Mendalo, Muaro Jambi, Primary School 197/IX Pematang Gajah, Muaro Jambi, and Primary School 236/IX Aur Duri, Muaro Jambi. The highest data obtained from the questionnaire is 100% and the lowest is 70%. The results of the level of need for student worksheets can be seen in table 1 below:

Table 1 Results of Questionnaire Level of Need for MIKiR Student Worksheet

Number	Nama	Data
1	A	88
2	B	100
3	C	90
4	D	88
5	E	83
6	F	75
7	G	92
8	H	83
9	I	78
10	J	92
11	K	70
Average		85

Table 1 shows that teachers desperately need a MIKiR-based student worksheet. With these results, the research is continued in the next phase, namely: design, development, and implementation. The need for Students' worksheet bades MIKiR is expected to help teachers in the learning process. the Jambi University Primary School Teacher Education partner school has applied for one semester the MIKiR approach to learning. Teachers try to make worksheets for students in MIKiR learning, but the worksheets produced cannot be said to be perfect. There is a component that is lacking in the workload produced by the teacher.

Based on the results of interviews, the teacher was curious about the Students' worksheet bades MIKiR to be developed. The teacher wants to use if it has been developed later. The results of interview footage are seen in table 2.

Table 2. Excerpts of Interviews Level of Needs MIKiR Student Worksheet

Number	Pertanyaan	Jawaban
1	What do you think if Students' worksheet bades MIKiR are developed?	E: Strongly agree, Students' worksheet bades MIKiR are very helpful in the learning process
2	Why do you need Students' worksheet bades MIKiR in learning?	A: Because the MIKiR approach is new to me, therefore I need examples of activities for each of the steps B: because the MIKiR-based worksheet helped me in designing the MIKiR-based RPP
3	This is an example of a draft MIKiR-based student worksheet, what do you think about this MIKiR-based student worksheet?	G: Very good, I want to read and use it when it's printed I: Frankly in making worksheets my students need a long time so if there is a worksheet like this I am very interested in using it in my learning

Subject Matter on the Theme Always Save Energy Appropriately

The results of the learning material needed on the theme are always saving energy obtained through questionnaires and interviews. The questionnaire results obtained from the 8 highest indicators have 4 indicators with a value of 100, namely: the need for energy source experiments, energy utilization experiments, alternative energy experiments, and games about fractions. The lowest score is 85 about new information on all sub-themes and interviews to obtain new information. The results of the learning material needed on the theme are always saving energy more clearly can be seen in table 3 below:

Table 3. Result of Questionnaire Subject Matter on the Theme Always Save Energy Appropriately

Number	Indicator	Data
1	New material or information about energy sub themes 1, 2, and 3	85
2	Interview activities to get new information	85
3	The material includes the use of local resources	91
4	Energy source trial activities	100
5	A trial of energy benefits using tools as a learning resource	100
6	Experimental activities about alternative energy	100
7	Game about fractions and relationships between them	100
8	Traditional game for locomotor and non locomotor motion	93
Average		94,3

Table 3 shows that the teacher wants material, experiments, and games on the MIKiR-based student worksheet. Based on the results of this questionnaire, the researchers will continue to the next stage, namely: design, development, and implementation. Materials, experiments, and

games on Students' worksheet bades MIKiR are expected to help teachers in the learning process. The teacher's obstacle in making Students' worksheet bades MIKiR is that designing activities that are in line with MIKiR is considered difficult.

Based on the results of interviews with teachers about the material for Students' worksheet bades MIKiR to be developed. The teacher expects that when the teacher has finished developing the teacher can find tools and materials easily. The results of interview footage are seen in table 4 below.

Table 4. Interviews of Learning Materials Needed Themes Always Save Energy

Number	Question	Answer
1	Why do you need additional experimental activities besides the 2013 curriculum book about the benefits of energy, energy sources, and alternative energy?	A: To exclude students directly involved in learning, so learning is more meaningful.
2	Why is material needed that includes utilization of local resources?	A: introducing Jambi local resources to students in particular, and outside Jambi generally. K: Jambi is rich in local resources, so for those who love Jambi, we need to introduce students to local resources
3	Why is additional information needed besides the 2013 curriculum book about the benefits of energy, energy sources, and alternative energy?	D: to increase students' insight into the material they want to learn

DISCUSSION

1. Needs for Student Worksheets Based MIKiR

Data obtained from questionnaires and interviews show that the level of teacher needs on Students' worksheet bades MIKiR is very high. The teacher knows the importance of additional information, additional experiments, and additional games for students from the worksheet. On the worksheet that will be developed the teacher hopes that the activities that will be carried out by students add insight, creativity, innovation, meaningful, active, interactive, fun, and challenging for students. The researcher will develop a worksheet as expected by the teacher. The worksheet will help teachers and students so that the learning process is successful and reaches the learning objectives. In addition, the worksheets that will be developed will be in accordance with the demands of the 2013 curriculum. The hope and expectations that Ayva researchers will develop (2012) say that student worksheets have an impact on academic success and positive attitudes towards students.

Activities on student worksheets based MIKiR are conducted in groups or in pairs. This is in the step of interaction. Interactions by students to work on experiments and answer questions together. At the end of the lesson the teacher will reflect, to find out the level of understanding or mastery of the students about the material. Interactions carried out together with group friends or partners are intended to make students care more, take responsibility in group assignments, and contribute their ideas. In line with the results of Astutik's study, et al. (2017)

students solve problems in collaborative learning, so that students have a positive sense of dependence and work together with group friends to achieve common goals.

2. Subject Matter on the Theme Always Save Energy Appropriately

Data obtained from questionnaires and interviews show that teachers want the subject matter on Students' worksheet bades MIKiR to be multiplied by experiments, information, and games other than those in student books in the 2013 curriculum. Experiments in sub-themes 3 about alternative energy can be developed from nature around. Examples of alternative energy that can be developed are the sun, banana peels, and tomatoes. These three things are very easy to find in the environment. This activity is in line with Mustofa's (2013) research results that school garden observation activities in the form of clear work steps, assignments, and group discussion activities at worksheets, can make students more directed in conducting observation activities.

Additional information about local resources in Jambi can be developed on the MIKiR-based student worksheet. Jambi is rich in local resources so we need to introduce it to students. It is hoped that later local resources can be managed properly.

Traditional games for locomotor and non locomotor movements need to be added. Sport sciences is a lesson taught by teachers in the field of study. Study field teachers must introduce traditional games to today's students. Because today's students who are more interested in getget almost forget about traditional games. Besides teaching mathematics also need to learn while playing. Games in math subjects are highly expected to be developed. The culture-based integrated learning model developed by Sukmadinata (2010) is an MPTBB developed in accordance with the needs and factual issues in the field by emphasizing goals that not only increase mastery of social studies material, but more than that as a learning model that is able to improve student's appreciation of the local culture. Therefore the integration of local culture in learning is very important.

CONCLUSIONS

Conclusions that can be drawn from the results of the needs analysis on Students' worksheet bades MIKiR are: a) the level of teacher needs for the development of Students' worksheet bades MIKiR is very high. The teacher wants to be assisted in implementing the MIKiR approach to learning. b) The material that you want to have in the MIKiR-based student worksheet is experiments, games, and information that have not been found in the 2013 curriculum book.

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