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Development of student worksheet based on *MIKiR* approach for fifth grade students' learning science

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ABSTRACT

This research is motivated by the importance of developing student worksheets (*LKPD* in Indonesia term) in order to make students active in learning. *LKPD* aims to facilitate educators in carrying out learning. This study uses research and development (R&D) method, according to the ADDIE model development procedure (analyze, design, development, implementation, and evaluation). Data collection techniques in this study were using interview sheets, and questionnaires to test products by validators (educational technology experts, material experts and linguists), teacher response tests, and student response tests. The study produces *LKPD* based on *MIKiR* approach on the topic of heat and its transfer, *MIKiR* is an a learning approach consists of *mengalamai* (experiencing), *interaksi* (interaction), *komunikasi* (communication), and *refleksi* (reflection) activities which are part of active learning activities. The results of the validation data analysis show that the *LKPD* meets the very valid criteria. Teachers and students also gave a high score to the feasibility of the *LKPD* based on *MIKiR* approach. Therefore, MIKiR-based *LKPD* on heat and transfer materials are very suitable to be used as one of the active teaching materials in supporting fifth grade students' learning science.

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INTRODUCTION

Education is essentially a basic need of every human being. The existence of targeted education is believed to be able to improve the quality of human resources. School is a means of formal education which in addition to providing knowledge also develops the skills possessed by students. In this case, the school as an educational environment does not take over the role and function of parents in educating children in the family environment, but the school together with parents helps educate these children. According to Hermino (2013) the role and function of the school is to help families or parents in the education of their

children and play a role in providing knowledge, skills, inculcating complete attitude values according to the different needs of each student.

Learning is an activity of implementing the curriculum of an educational institution in order to influence students to achieve the educational goals that have been set (Zaman & Eliyawati, 2010). Currently, education in Indonesia refers to the 2013 curriculum. The preparation of the 2013 curriculum is a government policy in the field of education. The 2013 curriculum is a form of development and improvement from the previous curriculum. The 2013 curriculum was approved by the Ministry of Education and Culture starting in 2013. In a balanced way, the 2013 curriculum fulfills three main components in education in the form of knowledge, skills and attitudes (Khusniati & Pamelasari, 2014). The 2013 curriculum is based on an approach that is often called a scientific approach or scientific approach in the context of the learning process.

In the Minister of Education and Culture Number 81A of 2013, the scientific approach contains learning activities which include the five processes of learning activities, namely; observing, asking questions, gathering information, associating and communicating (Rhosalia, 2017). The involvement of the teacher's role in creativity and innovation is the main key to the success of the learning process by involving students in each learning to be active. Based on this, teachers are expected to develop teaching materials that can stimulate active students, as a tool in the learning process and can be used as a learning resource. According to Prastowo (2013) teaching materials are media used by educators in learning activities both in the form of written and unwritten materials that contain learning materials. Teaching materials have several types in the form of textbooks, modules, audio, audio-visual, LKPD and others that are developed in the learning process. Learning activities of course require devices that support in order to make learning active, LKPD is one of the learning tools that can be used in the learning process.

LKPD (student work sheet) contains an assignment sheet that includes instructions and steps that must be done by students (Depdiknas, 2008). This is in line with the opinion of Prastowo (2015) which states that LKPD is a printed teaching material in the form of sheets of paper containing material, summaries, and instructions for implementing learning tasks that must be done by students referring to the basic competencies that must be achieved. . A good LKPD design is needed to achieve learning that encourages students to be active. Teaching materials in the form of LKPD can be said to be feasible if they meet the eligibility criteria in the form of feasibility validation and can be applied to various educational products. For this reason, it is necessary to develop teaching materials in the form of LKPD to facilitate the achievement of competencies that must be achieved and make it easier for teachers to carry out learning.

In general, there are still many teachers who have not developed LKPD. This is in line with previous research conducted by Wiguna (2016) which shows that the LKPD that is widely used by schools now is the LKPD circulating in the market, published by conventional book publishers, so that the material contained in the LKPD is still a lot that does not come from activities or experiences appropriate, not contextual and not in accordance with the development of students.

One of the solutions offered to this problem or condition is to use the "MIKiR" approach which is relevant to the spirit of the 2013 curriculum, a scientific approach in the form of a conceptual framework, but in MIKiR it is more practical. The MIKiR method has

been implemented by schools that have received training and assistance from the Tanoto Foundation since 2010. "MIKiR is an approach with the acronyms M (Experiencing), I (interaction), Ki (Communication), and R (Reflection). This MIKiR approach is able to improve the learning process (Good Practice Module, 2018)".

Natural Sciences (IPA) is one of the subjects at the elementary school level that studies natural phenomena and can be obtained using the observation method. Science learning is expected to provide knowledge (cognitive) which is the main goal of learning. Besides that, science learning is also expected to provide skills (psychomotor), scientific attitude skills (affective), understanding, habits and appreciation, (Trianto, 2010). Science learning is related to finding out about nature systematically, so that science is not only the mastery of a collection of knowledge but also a process of discovery. The existence of science learning is expected to be a vehicle for students to learn about themselves and the natural environment. The learning process emphasizes providing hands-on experience to develop basic competencies in order to explore and understand the natural surroundings scientifically. One of the materials taught in science learning in elementary schools is heat and its transfer.

METHOD

This research was conducted at the University of Riau Campus and SD Negeri 192 Pekanbaru, which is located at Jalan Teladan, Simpang Baru, Tampan District, Pekanbaru City, Riau Province. This research activity starts from March to August 2021. This research is a research and development (R&D) using the ADDIE model. This study aims to produce a new product in the form of MIKiR-based worksheets that are feasible to increase science learning activities for fifth grade elementary school. According to Robert Maribe Branch (Sugiyono, 2019) The development model with the ADDIE approach consists of the Analysis, Design, Development, Implementation, and Evaluation (evaluation) stages. Development research aims to develop or improve existing products.

According to Hermawan (2019) research and development is a process or steps to develop a new product or improve an existing product. The resulting product can be in the form of software and hardware, such as modules, books, learning programs or learning aids. Research and development is different from research which usually only produces suggestions for improvement, but research and development can produce products that can be used immediately. In this study, researchers developed a MIKiR-based Student Worksheet (LKPD) in elementary schools. The flow of the research carried out to produce MIKiR-based LKPD products as science learning media in elementary schools.

Data analysis technique is a method used to analyze data by processing it into information, so that the characteristics or characteristics of the data are easy to understand and useful for providing answers to problems related to research, both those relating to data descriptions, make inductions, or draw conclusions about population characteristics (parameters) based on data obtained from samples (statistics) (Tarjo, 2019). In this study, researchers conducted quantitative and descriptive qualitative data analysis. Quantitative analysis is used to process data in the form of numbers obtained from product validation questionnaires and product trial questionnaires. Categories for the quality of LKPD are based on table 1. While qualitative descriptive analysis is used to process information from the results of interviews with students in the one to one stage.

Table 1. Categories of the validity and feasibility of *LKPD*

Criteria	Kategori
81 - 100	Very Valid/Very Feasible
61 – 80	Valid/Feasible
41 – 60	Less Valid/Less Feasible
0 – 40	Not Valid/ Not Feasible

RESULTS AND DISCUSSION

The product resulting from this research and development is in the form of MIKiR-based Student Worksheet (LKPD) teaching materials, theme 6, Heat and Transfer material, class V SD. This product was developed by researchers with the aim that it can be used by teachers as an active teaching material in the classroom. So that the teaching materials used have renewal and different values from the previous ones, namely MIKiR (Experiencing, Interaction, Communication, and Reflection) based, as well as attractive, pictorial, and colorful appearances. The type of research conducted by the researcher is Research and Development (R&D) with the ADDIE (Analysis, Design, Development, Implementation, Evaluation) stages.

a. Analysis

Analysis of Science Learning Material

The analysis of science learning is carried out starting with analyzing the curriculum and then the objectives of learning science for heat and transfer materials. The current curriculum in Indonesia is the 2013 curriculum, where the 2013 curriculum is delivered thematically. Thematic learning is learning that uses themes in linking several subjects so that it can provide meaningful experiences to students (Effendi, 2009).

Although the thematic learning process contains several subjects simultaneously in one theme, the material for each subject cannot be separated from the basic concepts it has. This is so that the basic concepts of each subject can still be conveyed properly. In this study, the researcher limited the analysis that only focused on the learning material for Science Class V and was limited to materials related to heat and its transference.

Analisis of Student Characteristics

The characteristics of the fifth-grade students of SDN 192 Pekanbaru which were observed by looking at the indicators of student characteristics according to Jean Piaget, the learning process of students at the concrete operational stage was at the age of 7-11 years who had the characteristics of concrete or real operational thinking, liked to play, learn in groups and exchange ideas.

Evaluation of Analisis

In curriculum analysis, although the heat and transfer material is packaged in thematic form (combined with other subject matter), the heat and transfer material in theme 6 cannot be separated from the basic concepts it has. This is intended so that the basic concepts of hot matter and its transfer can still be conveyed properly. The material presented in the LKPD

does not only take one sub-theme, or only one lesson, but takes and develops all the material in theme 6. The heat material in theme 6 is related to each other, so it would be nice if the material contained in the LKPD was developed. as a whole (one theme), it is still limited to science material only, namely the matter of heat and its transference. In the section on student characteristics, it is known that it is necessary to develop LKPD, in order to make students active in the learning process.

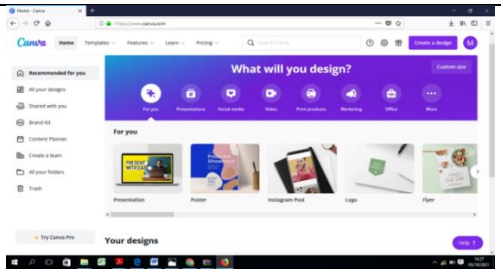
b. Design

After the analysis, the steps taken at the design stage are:

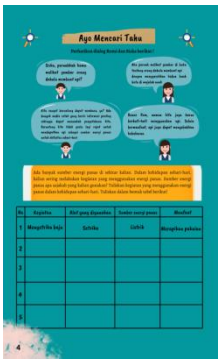
1. Collecting hot material and its transfer.
2. Create research instruments (expert validation instruments, teacher response instruments, five of one-to-one questions and student response instruments).
3. Create a design framework with storyboards and prototypes.

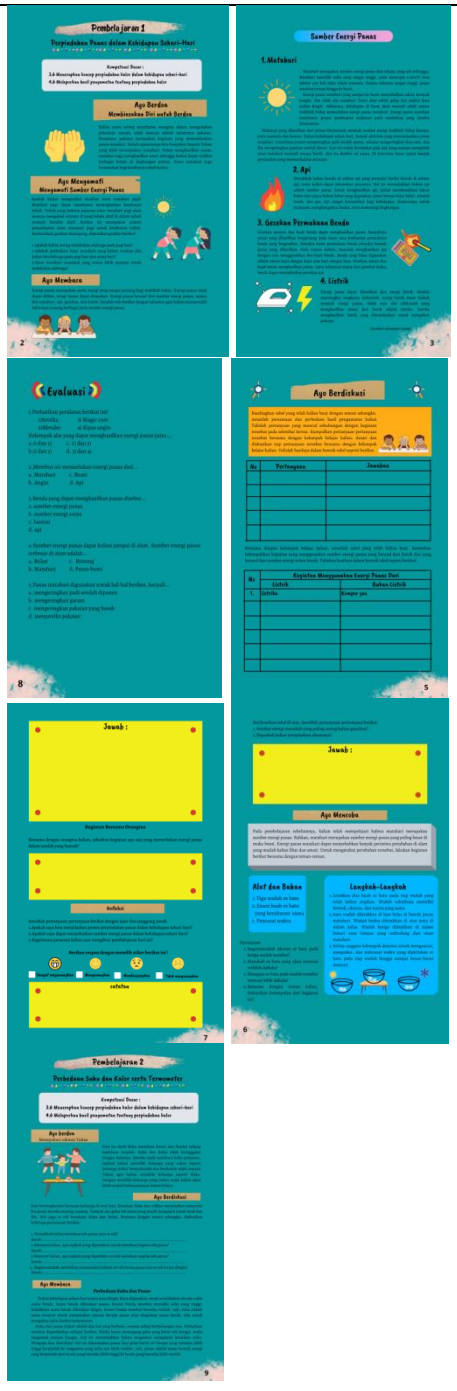
MIKiR-based worksheets are designed using Microsoft Word and Canva. At this stage the researcher designs the parts of the MIKiR-based LKPD, starting from the cover design and the contents of the LKPD. The researhers present the prototype in table 2.

Table 2. Prototype MIKiR-based LKPD

No	Design	Visual	Explanation
1.	Platform		The design in this development uses one of the platforms, namely "Canva". In this platform there are many choices of images, illustrations, templates, colors, fonts, and so on.
2.	Cover		In the cover illustration display, there are various elements in the form of objects (shapes) that are illustrated, context in the form of the environment, people or other creatures, then enter the main title of the material, namely "Heat and its Transfer". Furthermore, the LKPD is equipped with the student's identity, the 2013 Curriculum logo, the Ministry of Education and Culture logo, and the UNRI logo, as well as the author's name and NIM

3.	Title Page		The title page contains the name of the teaching material, namely "MIKiR-Based Student Worksheet", then the main title of the LKPD is "Heat and its Transfer", there is a description of the target of the MIKiR-based LKPD, namely "for SD/MI Class V". Description of the author's name "Mayasari L. Tobing", the name of the editor "Dr. Rian Vebrianto, M.Ed.", name of supervisor 1 "Dr. Neni Hermita, S.Pd., M.Pd." and the name of supervisor 2 "Dra. Hj. Gustimal Witri, M.Pd.". There is a Riau University logo on the lower left side of the title page. The use of the typeface is also considered so that it is easy to read and still attractive. For the background color, it is given a light blue color.
4.	Preface		The preface contains gratitude, a brief explanation of the LKPD and thanks to the parties involved in the process of making the LKPD.
5.	Table of contents		The instructions contain steps for using the LKPD which aims to make it easier for students to use the LKPD.

6.	Instruction		The instructions contain steps for using the LKPD which aims to make it easier for students to use the LKPD.
7.	Contents: Subthema 1, 2, and 3	  	The first page of sub-themes 1, 2 and 3 contains the titles of sub-themes 1, 2 and 3 which are appropriate to the thematic book. There is an explanation that tells the illustration of the picture and also the apperception. Placement of writing and images arranged as neatly as possible to be interesting and easy to read.
8.	Learning material 1, 2, and 3	 	Sub-themes 1, 2 and 3 each contain 3 learning materials arranged in sequence, with learning materials. In learning activities there are MIKiR steps (Experiencing, Interaction, Communication, and Reflection) in each lesson. The "Experiencing" activity contains a description of the learning material/summary of knowledge/concepts/principles in accordance with KD and the learning objectives to be achieved. Experiencing activities are also supported by pictures and information



related to learning. The forms of activities are; make observations and experiments. Interaction activities contain activities to carry out experiments, as well as questions and assignments either individually or in groups. In this interaction activity, students will exchange ideas or opinions between two or more people in the form of groups who will be assigned to complete tasks in the form of questions in the LKPD by discussing between two or more people. The questions or assignments given are related to the description of the material that has been given.

In communication activities, students convey their arguments or opinions or groups to other groups. The communication process is given related to the description of the material that has been given, it can be in the form of oral or written which will later be collected to the teacher, convey ideas, convey the results of work, report the results of experiments and report the results of the discussions of classmates or groups.

The "Reflection" activity contains questions to see how far the level of understanding is after studying learning and seeing the achievement of basic competencies and learning objectives. In reflection activities, students

			also write down material that has or has not been understood with the aim of improving the next learning process and writing expressions that are felt during the learning process. At the end of each lesson there is an evaluation question that serves to determine the level of students' understanding of the material that has been studied.
9.	Glosarium		The glossary contains a dictionary or terms in a particular field that are contained in a concise form. The glossary in this MIKiR-based LKPD contains terms related to hot matter and its transfer.
10.	References		The bibliography in this MIKiR-based LKPD contains references/sources of material used as a reference in the preparation of MIKiR-based LKPD.

Evaluation of Design Process

In the MIKiR-based LKPD section, it is necessary to provide a separator between sub-theme 1, sub-theme 2, and sub-theme 3 to make it clearer and easier for students to understand. Then, the developer considers that it is necessary to add a "glossary" section as a guide for students so that they can find out terms that may be new to students. And on the back cover of the LKPD, it is necessary to add a brief explanation of the contents of the LKPD and the novelty of this MIKiR-based LKPD.

c. Development

After the MIKiR-based LKPD has been developed and becomes a complete product, the LKPD will then be tested for feasibility/validity. Researchers will conduct a validity test, by providing validator response sheets to educational technology experts, material experts, linguists in order to improve product development. Based on the results of the validation of educational technology experts, the average score of the assessment is 93.96% which belongs to the very valid category, which can be seen in table 3.

Tabel 3. The Results of Technolgy Expert Validation

No	Indicator	Score	Category
1.	Contents	95.83%	Very Valid
2.	Presentation	100%	Very Valid
3.	Language	83.33%	Very Valid
Average		**93.96%**	**Very Valid**

Based on the results of material expert validation, the average t score is 94.44% which is included in the very valid category, which can be seen in table 4

Tabel 4. The Results of Material Expert Validation

No	Indicator	Score	Category
1.	Contents	90%	Very Valid
2.	Presentation and Language	92.86%	Very Valid
3.	Relevant to HOTS	100%	Very Valid
Average		**94.44%**	**Very Valid**

Based on the validation results from linguists, the average score of the assessment is 91.67% which belongs to the very valid category, which can be seen in table 5.

Tabel 5. The Results of Language Expert Validation

No	Indicator	Score	Category
1.	Language according to the level of development of students.	100%	Very Valid
2.	Communicative and interactive	100%	Very Valid
3.	Language according to formal Indonesai	75%	Valid
Average		**91.67%**	**Very Valid**

Evaluation of Development

At the stage of completing the MIKiR-based Student Worksheet, the developer considers it important to add a "knowledge window", the aim is to add insight to students. The Knowledge Window is made in the form of a barcode that can be accessed by students.

d. Implementation

At the implementation stage, valid and feasible LKPDs were then printed to see the teacher's response and the responses of the fifth-grade students of SDN 192 Pekanbaru.

Student Response (One To One)

This one-to-one stage aims to see the readability of students towards the MIKiR-based Student Worksheet products that have been developed. One-on-one trials were carried out individually to 2 fifth grade students at SDN 192 Pekanbaru. The activity carried out was to test the MIKiR-based Student Worksheet product that had been developed. This one to one stage was observed directly by the researcher. At this stage, interviews were conducted with students regarding the MIKiR-based Student Worksheets that were developed.

In this one-to-one activity, it was found that students felt happy using the MIKiR-based Student Worksheet that was developed. The MIKiR-based Student Worksheet developed has an attractive, colorful appearance and the material contained can be understood by students. The pictures, colors, and brief explanations on the MIKiR-based Student Worksheets make students enthusiastic in using them, and they don't find it difficult. In addition, students become well acquainted with heat material and its transfer.

Teacher Response

The teacher's response was carried out on four fifth grade elementary school teachers to see the teacher's response to the MIKiR-based LKPD that the researcher developed. Based on the results of the teacher's response, the average score of the assessment is 87.5%, with very feasible.

Student Response (Small Group)

The small group trial was conducted on Tuesday, August 10, 2021, which was tested on 6 students at SDN 192 Pekanbaru. Students use MIKiR-based worksheets as teaching materials during the learning process. At this stage the teacher also observes and supervises the implementation process of the product being developed. After learning using MIKiR-based LKPD is carried out, then students fill out a 1-4 scale questionnaire. Based on the results of the student response test, the average assessment score is 86.25%, it can be seen in table 6.

Table 6. Students' Responds to MIKiR-based LKPD

No.	Indicator	Score	Category
1.	Attractive	84.72%	Very Feasible
2.	Content	83.33%	Very Feasible
3.	Language	95.83%	Very Feasible
	Average	**86.25%**	**Very Feasible**

Evaluasi of Implementation

The developer evaluates that students generally like the MIKiR-based LKPD display because it is attractive, has lots of colors, the material in it can be understood, has many experiments that are easy to do. Meanwhile, the teacher also considered that the MIKiR-based LKPD was good, it was just that there were some writings that were still relatively small and needed to be improved. In addition, LKPD also attracts the attention of students because MIKiR-based LKPD has a series of activities that allow students to directly experience MIKiR activities (Experiencing, Interaction, Communication, and Reflection), as well as stimulating students to carry out active learning.

e. Evaluation

Evaluation is carried out at each stage of the model with ADDIE by making revisions so as to produce quality products. This is in line with the opinion according to Tegeh, et al (2014) in the ADDIE model that evaluation at each stage can minimize errors in the process of developing a product.

DISCUSSION

The present study analyze students' difficulties in solving addition of fraction tasks based on 3 indicators (Learner in Mulyono, 2012). The researchers elaborate each of them as follows:

a. MIKiR-based LKPD Development Procedure

The Student Worksheet (LKPD) is one of the types of printed teaching materials commonly used by teachers in the learning process in the classroom (Dermawati et al. 2019). There are instructions or steps in completing the tasks that have been prepared in the LKPD (Prastowo, 2014). MIKiR-based Student Worksheet teaching materials were developed based on the ADDIE Analyze, Design, Develop, Implement, and Evaluate (evaluation) development models. The ADDIE model was chosen because it is in accordance with development that shows systematic steps that will later produce a product. The concept of this model is clear and easy to apply and this model is in accordance with the development of media in the form of LKPD where at each stage revisions are made to produce good and suitable products.

The first stage in this ADDIE model development research is Analysis. The analysis used consists of 2 stages, namely: analysis of science learning materials and analysis of student characteristics. The development of MIKiR-based Student Worksheet products begins with an analysis of science learning materials. This analysis was carried out by analyzing the curriculum, as well as the science learning objectives contained in the 6th theme of class V SD. Curriculum analysis aims to identify the applicable curriculum, namely the 2013 curriculum. It is necessary to develop learning tools to achieve Basic Competencies.

The analysis of the characteristics of students aims to determine the attitudes, learning styles, learning abilities and motivation of fifth grade elementary school students in learning, making it easier for researchers to plan the manufacture of MIKiR-based Student Worksheets according to the characteristics of students. In the analysis of the characteristics of students, it was found that elementary school-aged children like things that are concrete and experience directly what they are learning and like learning in groups. According to Piaget, individual cognitive (intellectual) development takes place in 4 stages, namely (1) the sensorimotor stage, this stage develops from 0-2 years; (2) preoperational stage, starting from 2-7 years; (3) the concrete operational stage, this stage develops from 7-11 years; (4) Formal operations, starting from 11 years old to adulthood. Fifth grade elementary school students are included in the concrete operational period.

After conducting the analysis stage, the researcher then began to design the product to be developed. The product development plan is to make a design in the form of a storyboard to make it easier to design the LKPD and a prototype made using the Canva application as an initial design in developing the LKPD before validation. The development resulted in the final product of the LKPD which was made and went through a revision stage according to the input of experts.

b. Product Validity

Validation is mandatory before the trial is carried out in order to determine the feasibility of a product obtained from a team of validation experts. The validation carried out in this development went through 3 stages, namely; 1) validation of educational technology, 2) validation of materials and 3) validation of language.

The educational technology expert validator assesses the content, presentation and language of MIKiR-based LKPD products. After being assessed by educational technology experts, the researchers then made improvements according to the comments and suggestions given. From the results of the product assessment conducted by educational technology experts, a score of 93.96% was obtained with very valid criteria. After an assessment of the product, the researchers then improved the product according to the advice of educational technology experts so that the teaching materials produced were of higher quality.

The material expert validator assesses the material contained in the MIKiR-based LKPD, namely the material on theme 6th grade V SD, heat and its transfer. After being assessed by a material expert, the researcher then made improvements according to the comments and suggestions given. The results obtained from the material expert validator are 94.44% with very valid criteria.

The linguist validator assesses the language in MIKiR-based LKPD products. After being assessed by a linguist, the researcher then made improvements according to the comments and suggestions given. From the results of the product assessment conducted by linguists, a score of 91.67% was obtained with very valid criteria.

After being revised, the developed product is then printed and applied in the learning process. This was done to see the teacher's response and the student's response to the MIKiR-based LKPD that was developed. The teacher response test was conducted on four fifth grade teachers at SDN 192 Pekanbaru. This teacher response test was carried out by showing the MIKiR-based LKPD to the teacher concerned. After that, each teacher will provide an assessment using the questionnaire contained in the teacher's response sheet. Based on the results of the teacher's response test, a total score of 87.5% was obtained with very decent criteria. After the assessment, the researchers then made improvements to the MIKiR-based LKPD according to comments and suggestions from the teacher.

To obtain the results of student responses, the researchers conducted 2 trials of the MIKiR-based worksheets that were developed, namely one-on-one trials and small group trials. One-on-one trials were conducted on two students and small group trials were tested on six fifth grade students at SDN 192 Pekanbaru. The results of the one-on-one trial obtained very good results because both students felt happy using the developed MIKiR-based LKPD, the LKPD had an attractive, colorful appearance and the material contained could be understood by students. After conducting a one-on-one trial, a small group trial was conducted on six fifth grade elementary school students at SDN 192 Pekanbaru. The small group trial obtained a percentage of 86.25%, so it can be said that the MIKiR-based LKPD product is very feasible.

CONCLUSSION

The development of teaching materials in the form of MIKiR-based student worksheets was developed using the ADDIE model. MIKiR-based LKPD begins with making a storyboard as a guide for researchers in compiling LKPD. The resulting Storyboard is then developed on the Canva platform according to the Storyboard. LKPD contains materials, experiments, evaluation questions and a series of MIKiR-based activities. MIKiR-based worksheets are made attractive, colorful, have lots of pictures as material reinforcement to attract the attention of students, because they are developed as attractive as possible and in accordance

with the characteristics of elementary school children. The contents of the LKPD are arranged in a coherent manner according to the heat material and its transfer. The material contained in the LKPD is material in Theme 6 which is focused only on science material, namely heat and its transfer. After completing the LKPD on the Canva platform, the next step is to print the LKPD to be tested for validity and to find out the teacher's response and the student's response.

The teacher's response to the MIKiR-based LKPD is that the LKPD is already good and interesting, only that in some parts there are small writings so that they are enlarged. Students at the one to one stage feel happy and enthusiastic about using MIKiR-based LKPD because it has an attractive, colorful appearance and the material contained can be understood by students. The average score obtained from the teacher's response sheet is 87.5% with a very decent category. The average score obtained from the student response sheets is 86.25% with a very decent category.

REFERENCES

Andrajati, N. H.. (2020). *Pengembagan Bahan Ajar Tematik Online Berbasis High Order Thinking Skills (HOTS) Subtema Kekayaan Sumber Energi Di Indonesia*. Skripsi, Program Pascasarjana, Program Studi Magister PGMI, Institut Agama Islam Negeri Salatiga.

Arifin, S. (2016). Pengaruh Pembelajaran Tematik-Integratif Berbasis Sosiokultural Terhadap Hasil Belajar Peserta Didik Kelas III Sekolah Dasar. *Profesi Pendidikan Dasar*, 19-29.

Arsyad, A. (2011). *Media Pembelajaran*. Jakarta: PT Raja Grafindo Persada.
Dasar Kurikulum 2013 pada Pendidikan Dasar dan Menengah

Departemen Pendidikan Nasional. (2008). *Pengembangan Bahan Ajar dan Media*. Jakarta: Departemen Pendidikan Nasional

Dermawati, N., Suprapta, & Muzakkir. (2019). Pengembangan Lembar Kerja Peserta Didik (Lkpd) Berbasis Lingkungan. *Jurnal Pendidikan Fisika, 7*(1), 74.

Foundation, T. (2018). *Modul Praktik Baik Tanoto Foundation*. www.tanotofoundation.org

Herlina, V. (2019). *Panduan Praktis Mengolah Data Menggunakan SPSS* . Jakarta: PT Elex Media Komputindo

Hermawan, I. (2019). *Metodologi Penelitian Pendidikan Kuantitatif, Kualitatif, dan Mixed Methode*. Kuningan: Hidayatul Quran Kuningan.

Hermino, A. (2013). *Asesmen Kebutuhan Organisasi Persekolahan*. Jakarta : Kompas Gramedia Building.

Khusniati, M., Pamelasari, S. D. (2014). Penerapan Critical Review Terhadap Buku Guru Ipa Kurikulum 2013 Untuk Mengembangkan Kemampuan Mahasiswa Dalam Menyusun Perangkat Pembelajaran Berpendekatan Saintifik. *Jurnal Pendidikan IPA Indonesia*, *2*(2), 168–176.

Maryono. (2017). Peran Guru Dalam Menerapkan Pembelajaran Tematik di Sekolah Dasar. *Jurnal Gentala Pendidikan Dasar 2*(1), 72-89.

Noprinda, C. T., & Soleh, S. M. (2019). Pengembangan Lembar Kerja Peserta Didik (LKPD) Berbasis Higher Order Thinking Skill (HOTS). *Indonesian Journal of Science and Mathematics Education*, *2*(2), 170.

Nursyamsi, D. & Suprapta, M. (2019). Pengembangan Lembar Kerja Peserta Didik (LKPD) Berbasis Lingkungan. *Jurnal Pendidikan Fisika*, *7*(1), 74–78.

Permendikbud Nomor 24 Tahun 2016 *Tentang Kompetensi Inti dan Kompetensi*

Prastowo, A. (2014). *Pengembangan Bahan Ajar Tematik Tinjauan Teoritis dan Praktik*.

Prastowo, A. 2015. *Panduan Kreatif Membuat Bahan Ajar Inovatif*. Yogyakarta: Diva Press.

Prastowo. A. (2013). *Pengembangan Bahan Ajar Tematik Panduan Lengkap Aplikatif*. Yogyakarta: Diva Press

Rhosalia, L. A. (2017). Pendekatan Saintifik (Scientific Approach) Dalam Pembelajaran Tematik Terpadu Kurikulum 2013 Versi 2016. *Journal of Teaching in Elementary Education), 1*(1), 59–77. https://doi.org/10.30587/jtiee.v1i1.112

Sugiyono. (2013). *Metode Penelitian Kuantitatif, Kualitatif dan R&D. Bandung*: ALFABETA.

Tarjo. (2019). *Metode Penelitian Sistem 3X Baca.* Yogyakarta: Deepublish.

Tegeh I M, et. al. (2014). *Model Penelitian Pengembangan*. Yogyakarta: Graha Ilmu.