



## Development of Student Worksheets Based on Probing Prompting in Science Learning for Class VIII Students at SMPN 06 Bengkulu City

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**Abstract:** This research aims to develop and determine the results of a feasibility test for student worksheets based on probing prompting in science learning for class VIII students at SMP N 06, Bengkulu City. The method developed in this research is (Research & Development or R&D). The subjects in this research were 3 expert lecturers as validation, responses from 10 class VIII students and 1 science teacher at SMP N 06 Bengkulu City. Data collection techniques in this research include initial observations to determine whether or not student worksheets are needed, interviews, and teacher and student response questionnaires. The results of this research are that the percentage of language experts is 86.66% (very feasible), the results of the material expert assessment are 83.75% (very feasible) and the results of the media expert assessment are 86.66% (very feasible). Meanwhile, data from questionnaire analysis of responses from 10 students scored a percentage of 84.64% (very practical), and 1 teacher respondent had a percentage of 89.09% (very practical). From these data, it can be concluded that the student worksheets based on probing prompting in science learning for class VIII students at SMP N 06 Bengkulu City are suitable for use as learning media to support the learning process.

**Keywords:** Student Worksheets, Probing Prompting

**Abstrak:** Penelitian ini bertujuan untuk mengembangkan dan mengetahui hasil uji kelayakan lembar kerja peserta didik berbasis probing prompting pada pembelajaran IPA siswa kelas VIII di SMP N 06 Kota Bengkulu. Metode yang dikembangkan dalam penelitian ini yaitu (Research & Development atau R&D). Subjek dalam penelitian ini adalah 3 orang dosen ahli sebagai validasi, respon 10 orang siswa kelas VIII dan 1 orang guru IPA SMP N 06 Kota Bengkulu. Teknik pengumpulan data dalam penelitian ini meliputi observasi awal untuk mengetahui dibutuhkan atau tidaknya lembar kerja peserta didik, wawancara, serta angket respon guru dan siswa. Hasil dalam penelitian ini yaitu dengan persentase ahli bahasa sebesar 86,66% (sangat layak), hasil penilaian ahli materi sebesar 83,75% (sangat layak) dan hasil penilaian ahli media sebesar 86,66% (sangat layak). Sedangkan data dari analisis angket respon dari 10 orang siswa mendapatkan nilai dengan persentase 84,64% (sangat praktis), dan responden 1 orang guru memiliki persentase 89,09% (sangat praktis). Dari data tersebut maka dapat disimpulkan bahwa lembar kerja peserta didik berbasis probing prompting pada pembelajaran IPA siswa kelas VIII di SMP N 06 Kota Bengkulu telah layak untuk digunakan sebagai media pembelajaran dalam menunjang proses pembelajaran.

**Kata Kunci:** Lembar Kerja Siswa, Probing Prompting

## • INTRODUCTION

Natural science lessons do not just provide knowledge in the form of facts, concepts or principles, further than that, this subject will also provide a process for discovering something new or a discovery. In science subjects, students will be asked to take an active role in the teaching and learning process, because the learning and teaching process can run well as it should if students gain real and direct experience. However, so far it is very unfortunate because this science subject is considered difficult and difficult to understand, then this also makes students unable to think critically during the learning process. Apart from that, not many people take an active role when learning is taking place, therefore it is very important for all parties to be actively involved in improving the education system that is currently being implemented.

With this, Allah says in Surah Thoha verse 114.

فَتَعَلَىٰ اللَّهُ الْمَلِكُ الْحَقُّ وَلَا تَعْجَلْ بِالْقُرْآنِ مِنْ قَبْلِ أَنْ يُقْضَىٰ إِلَيْكَ وَحْيُهُ وَقُل رَّبِّ زِدْنِي عِلْمًا

Meaning: So exalted is Allah, the true King, and do not rush to read the Qur'an before it is perfected in its revelation to you, and say: "O my Lord, add to me knowledge."

Improving the quality of education continues to be carried out by the government of the Republic of Indonesia as part of its responsibility to educate the nation's life as stated in the 1945 Constitution. The preamble and article 31 paragraph 3 and realizing the goals of National Education contained in Law No. 20 of 2003, are one of the efforts made by the government namely the development of the Competency-based National Curriculum.

Curriculum into the 2013 Curriculum. In the 2013 Curriculum, several things have undergone changes, including SK becoming KI, and the learning process approach using a scientific approach in accordance with (Permendikbud No. 103 of 2014), which was previously known as scientific inquiry in the 2006 curriculum (Istikharah, 2017, p. 31). Several preparations need to be made to make the objectives of this curriculum a success, one way that can be done is to develop learning media in the form of teaching materials. Teaching materials are a set of materials that are arranged systematically, both written and unwritten, so as to create an atmosphere that allows students to learn. Teaching materials can include textbooks, modules, handouts, student worksheets, mock-ups, audio teaching materials, interactive teaching materials and so on (Prastowo, 2011, pp. 16-17). Teaching materials have the first function for educators, namely changing the role of educators from teacher to facilitator, saving time in the learning process, secondly for students, namely making it easier for students to learn independently.

The teaching materials developed in this research are student worksheets. Student worksheets are printed teaching materials that contain material, summaries and instructions for implementing learning tasks that must be carried out by students, which refer to the basic competencies that must be achieved. (Prastowo, 2011, p. 204). It is hoped that the development of student worksheets can be used as a learning resource for students, so that they can obtain materials as well as direction and motivation, so that they experience the process of understanding concepts. The benefit of having student worksheets makes it easier for teachers to carry out learning, while for students, it can make students adapt independently. The function of student worksheets compared to

other teaching materials is as teaching materials that can limit the teacher's tasks, and can activate students, as teaching materials that make it easier for students to understand the material, as teaching materials that are concise and task-rich in an effort to practice, make it easier implementation of teaching to students.

Meanwhile, based on the author's interview with the science teacher at SMP 06 Bengkulu City on March 18 2023, several information was obtained, namely: First, regarding the availability of teaching materials such as textbooks and worksheets, students still use modules as teaching materials, Second, student worksheets that have made by teachers is not in accordance with the meaning of actual student worksheets, the existing student worksheets do not have material, summaries and instructions for carrying out tasks, they only contain a collection of questions which are then used as homework (homework) for students. Third , existing student worksheets are not based on probing prompting, in linguistic terms "Probing" means digging or tracking. Meanwhile, according to the term "Probing" means trying to obtain clearer or more in-depth information, linguistically "Prompting" means directing, demanding, while according to the term it is a question asked to give direction to students in the thinking process (jayanti, 2018, p. 460 ). Fourth, students are less active in thinking in the learning process, because this process is very necessary so that they do not easily accept things, and can think logically. Students are trained to observe situations, raise questions, formulate hypotheses, make observations and collect data and then conclude.

Based on interviews with several students at school, they said that science learning was very difficult to comprehend and understand, apart from that, students still did not understand how to express ideas during learning. Students are also less active and rarely ask the teacher things they don't understand. This time the researcher wants to develop a student worksheet based on probing prompting with material on environmental pollution. By having student worksheets based on probing prompting, students can be more active in thinking in learning and can also make students understand the lessons given by the teacher better. Based on the results of research conducted by Karsini, & Ritonga (2020), the research results obtained show that student worksheets based on probing prompting are suitable for use based on the results of the level of validity and level of practicality. The percentage of validity level obtained was 85.78% (very valid) and the practicality level was 85.33% (very practical). From these results, it was identified that student worksheets based on probing prompting could be tested further.

Based on research conducted by Syamsir & Noviarni (2018), the results obtained were that the LKS produced by the development had been tested for their level of validity and practicality. Apart from that, testing shows that this worksheet can facilitate communication skills. Therefore, this worksheet can be used to facilitate students' mathematical communication skills. So it can be concluded that the probing-prompting based worksheet developed has valid and practical characteristics. Research conducted by Qomariyah & Wulandari (2018) showed that the validation results of LKS from media experts reached an average score of 84.3% according to the criteria (valid). These results were obtained after improvements were made from criticism and suggestions from validators. The validation results for the content criteria aspect show a score of 87.5% with very valid criteria because all question items are already in the worksheet, the presentation criteria aspect shows a score of 91.6% with very valid criteria.

Furthermore, the LKS validation results from these 2 material experts reached an average score of 81% with the criteria (valid), the validation results for the content

criteria aspect showed a score of 81.2% with the criteria (valid). The presentation criteria aspect shows a value of 90.6% with very (valid) criteria, the language criteria aspect shows a value of 75% with (valid) criteria.

## • METHOD

The type of research used in this development research is by using (Research & Development or R&D) the research method used in this development is a research method used to produce a particular product, and test the effectiveness of the product, to produce a particular product research is used. is to analyze the need to test the effectiveness of the product so that it can function in society, so this research is needed to test the effectiveness of the product produced. In this development research, the product developed is in the form of a Student Worksheet on the human digestive system for (SMP) subjects. Science as a tool or medium in the learning process. The resulting product is a student worksheet based on probing prompting with material on the human digestive system for class VIII SMP.

Research and development according to Sugiyono consist 10 general steps, of which the researcher will limit these 10 steps to 7 steps only up to the product revision stage. The subjects in this research were 3 teachers at SMP N 06 Bengkulu City.

### 1. Student Needs Analysis Test

This test was carried out to determine whether or not the Student Worksheets that the researchers would develop were needed. The following is a table of student needs which can be seen as follows:

**Table 4.1** Student Needs Analysis Questionnaire

No	Responden's Name	Answer Choices	
		Yes	No
1	Melisa Rahma Sinta	8	3
2	Olivia	6	5
3	Ayu Melisa Wulandari	8	3
4	Dedek Rana Aulia	8	3
5	Agus	11	0
6	Uswatun Faiza Syabella	8	3
7	Lastri	7	4
8	Chantyka Nuraini	7	4
9	Sherin Try Yenti	7	4
<b>Amount</b>		<b>70</b>	<b>29</b>
<b>Percentage</b>		<b>70,7%</b>	<b>29,3%</b>

From the table above, it can be seen that of the 9 respondents, 70.7% of students answered yes and 29.3% of students answered no. So it can be concluded that student worksheets are needed by students with an answer percentage of 70.7%.

## 2. Due Diligence

To validate the suitability of the LKPD there are three validators who are lecturers who are experts in their fields, namely Randi M.Pd, as a language expert validator, Mrs. Nurlia Latipah, M.Pd.Si as a material expert validator and Mr. Khosi'in, M.Pd. Si as a media expert validator. The data obtained from the product feasibility test can be seen as follows:

## 3. Expert Validation

The validation test results of several lecturers are as follows:

### a. Linguist

Language validation was carried out by a linguist, namely Mr. Randi, M.Pd. Based on the results of the linguist's validation assessment above on Probing Prompting Based Student Worksheets in Science Learning for Class VIII Students at SMP N 06 Bengkulu City, results were obtained with a percentage of 86.66% and were included in the "very feasible" category. Meanwhile, a summary of the data from the language validation assessment results can be seen in table 4.2 below.

**Table 4.2** Recap of Language Validation Results Data

Validator	Number Of Items	Max Score	Score Obtained	%	Interpretation	information
Randi, M.Pd	12	60	52	86,66%	Very Worthy	Valid

Information: Language Expert Validator: Randi, M.Pd

### b. Materials Expert

The material expert validator was carried out by a material expert, namely Mrs. Nurlia Latifah, M.Pd.Si. Based on the results of the material expert validation assessment above on Probing Prompting Based Student Worksheets in Science Learning for Class VIII Students at SMP N 06 Bengkulu City, results were obtained with a percentage of 83.75% and were included in the "very feasible" category. Meanwhile, a summary of the data from the material validation assessment results can be seen in table 4.3 below.

**Table 4.3** Recap of Material Validation Results Data

Validator	Number Of Items	Max Score	Score Obtained	%	Interpretation	information
Nurlia Latifah, M.Pd.Si	16	80	67	83,75%	Very Worthy	Valid

Information: Media Expert Validator: Nurlia Latifah, M.Pd.S

### c. Media Expert

The media expert validator was carried out by a media expert, namely Mr. Khosi'in, M.Pd.Si. Based on the results of the media expert validation assessment above on Probing Prompting Based Student Worksheets in Science Learning for Class VIII

Students at SMP N 06 Bengkulu City, results were obtained with a percentage of 86.66% and were included in the "very feasible" category.

**Table 4.4** Recap of Data from Media Validation Results

Validator	Number Of Items	Max Score	Score Obtained	%	Interpretation	information
Khosi'in, M.Pd.Si	15	75	65	86,66%	Very Worthy	Valid

Information: Media Expert Validator: Khosi'in, M.Pd.Si

#### 4. Product Trial Results

After the product went through the validation stage by material experts, media experts and language experts, the product was then tested with 10 class VIII students at SMP N 06, Bengkulu City. The trial phase for this product was carried out on August 30 2023 at SMP N 06 Bengkulu City.

**Table 4.5** Student Response Questionnaire Data

No	Responden's Name	Total Score
1.	M. Rizky	90
2.	Dedek Rana Aulia	77
3.	Ridho Andika	96
4.	David Marsel Lino	98
5.	Lastri	92
6.	Melisa Rahma Sinta	98
7.	Karisma Hakim	96
8.	Muttoharoh	93
9.	Olivia Adene Syafitry	94
10.	Dika	97
<b>Amount</b>		<b>931</b>

Based on the percentage score calculation above and referring to table 4.5, it states that students' responses to the Probing Prompting Based Student Worksheet media in Science Learning for Class VIII Students at SMP N 06 Bengkulu City with a student response percentage of 84.64% are classified in the category " very worthy." The table below shows the responses of science educators as follows:

**Table 4.6** Science Educator Response Data

No	Responden's Name	Total Score
1.	Norma Panjaitan, S.Pd	98
<b>Amount</b>		<b>98</b>

Based on the percentage score calculation above and referring to table 4.6, it states that the teacher's response to the Probing Prompting Based Student Worksheet media in Science Learning for Class VIII Students at SMP N 06 Bengkulu City with a student response percentage of 89.09% is classified in the "very" category. worthy"

## 5. Final Product Results

The final result of this stage is to obtain a Student Worksheet Based on Probing Prompting in Science Learning for Class VIII Students at SMP N 06 Bengkulu City which is suitable and practical to use. It is hoped that this Student Worksheet can become a new alternative learning media that can help and support the learning process. Through this Student Worksheet, it is also hoped that learning objectives will be easier to achieve and the time spent in the learning process will be more effective.

This learning media is printed using A4 paper for the contents, while the cover is printed using photo paper to make it look better. The specifications for this Student Worksheet developed are as follows:

- a. Size: 21 × 29.7 cm
- b. Paper type: Cover paper: photo paper, content paper: A4
- c. Number of pages: 30 pages
- d. Material: Human digestive system

### • RESULT AND DISCUSSION

This research aims to produce Probing Prompting Based Student Worksheets in Science Learning for Class VIII Students at SMP N 06 Bengkulu City. Then this development research was carried out using the research and development (R & D) method. Next, at the validation stage, researchers validated the language, materials and media to determine the suitability of Probing Prompting Based Student Worksheets in Science Learning for Class VIII Students at SMP N 06, Bengkulu City.

The previous research was conducted by Dyah Shinta Damayanti, Nur Ngazizah, and Eko Setyadi K (Radiation Journal. Vol. 3.No.1) entitled Development of Student Worksheets (LKS) Using a Guided Inquiry Approach to Optimize Students' Critical Thinking Ability on Dynamic Electricity Material at SMA Negeri 3 Purworejo Class X Year Lesson 2012/2013. The aim of this research is to produce student worksheets (LKS) with a guided inquiry approach to optimize students' critical thinking abilities. The difference between this research and the research that I will examine is the material used, the approach used. What this research has in common with the research I will be researching is to improve critical thinking skills.

Meanwhile, research was conducted by Abdullah Al Mukarram, Sri Hartini, and Mustika Wati (Scientific Journal of Physics Education Vol 2 no 3,) with the title Development of Student Activity Sheets (LKS) and Middle School Science Learning Media Based on Critical Thinking Skills. The difference between this research and the research that I will examine is the research objectives and methods. What this research has in common with the research I will be researching is that it is based on critical thinking skills.

The validation results regarding the assessment of the feasibility of Student Worksheets from the participants included language experts at 86.66% (very feasible), material experts at 83.75% (very appropriate) and media experts at 86.66% (very appropriate). Based on the validator's assessment, the LKPD developed by researchers in terms of language, material and media as well as teacher and student responses is very suitable for use. Next was the practicality test stage carried out by researchers on 10 respondents and 1 class VIII science subject teacher. Based on the results of research conducted by researchers at SMP N 06 Bengkulu City, student respondents had a

percentage of 84.64% (very practical), and teacher respondents had a percentage of 89.09% (very practical).

Based on these data, it can be concluded that the LKPD developed by researchers is practical for use by students of SMP N 06 Bengkulu City. After going through several processes and based on these categories the practicality value is 80% - 100%. To further strengthen the results of the research that the researchers conducted, the researchers included the results of previous research conducted by Utari et al in 2017 with the title scientifically oriented mathematics LKPD research which was said to be valid, practical and effective with a percentage of 79.41%.

## • CONCLUSION

The conclusions that can be drawn from developing student worksheets based on Probing Prompting are as follows: Development of Probing Prompting Based Student Worksheets in Science Learning for Class VIII Students at SMP N 06 Bengkulu City was developed in such a way using the research and Development (R & D) method. In this development research there are several stages, namely potential and problems, data collection, product design, design validation, design revision, product testing, final product. The results of research from linguists, material experts and media experts state that the Student Worksheet Based on Probing Prompting in Science Learning for Class VIII Students at SMP N 06 Bengkulu City is worthy of being tested in the field with a percentage of linguists of very feasible, the results of the material expert assessment were very feasible and the results of the media expert assessment were very feasible. Then proceed with conducting a practicality test through response analysis of 1 teacher with a percentage of very practical and 10 student respondents with a percentage of very practical. Based on the results of this research, it can be concluded that the development of Probing Prompting Based Student Worksheets in Science Learning for Class VIII Students at SMP N 06 Bengkulu City is expected to be developed to improve student learning outcomes.

It is hoped that the Student Worksheet Based on Probing Prompting in Science Learning for Class VIII Students at SMP N 06 Bengkulu City can be used in schools as additional teaching material to support the learning process. Considering that the results of research and development products can provide benefits for learning, it is recommended for teachers to develop these products with a wider scope or in other materials.

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