

DEVELOPMENT OF PROBLEM BASED LEARNING ORIENTED HIGH ORDER THINKING SKILLS IN CLASS V ELEMENTARY SCHOOL STUDENTS

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ABSTRACT

The success of developing problem-based learning LKPD teaching materials that are oriented towards High Order Thinking Skills for high-class students and testing the feasibility, convenience and attractiveness of the LKPD teaching materials. The research method used is development research using four stages, namely: the definition stage (define), the design stage (Design), the development stage (Development). The instruments used in this study were questionnaires and documentation. The questionnaire consisted of media experts, material experts, linguists, practitioners (educators) and student response questionnaires. Data analysis techniques using quantitative descriptive. The results of this study show that the feasibility level for material is 89.25%, media is 82.8% and for linguists is 88.4%. So from these three aspects it can be concluded that problem based learning LKPD oriented High Order Thinking Skills in thematic learning is very suitable for use in learning. The teacher's response got a score of 91.18%, seen from the students' response questionnaire, they got an average score of 81.17% and achieved very interesting criteria, which means that problem based learning LKPDs oriented to High Order Thinking Skills in students are very interesting or very proper to use.

Keywords: *Student worksheet (LKPD), Problem Based Learning, Higher Order Thinking Skills*

ABSTRAK

Keberhasilan pengembangan bahan ajar LKPD learning berbasis masalah yang berorientasi pada Keterampilan Berpikir Tingkat Tinggi bagi siswa kelas atas serta menguji kelayakan, kemudahan dan daya tarik bahan ajar LKPD tersebut. Metode penelitian yang digunakan adalah penelitian pengembangan dengan menggunakan empat tahapan yaitu: tahap pendefinisian (define), tahap perancangan (Design), tahap pengembangan (Development). Instrumen yang digunakan dalam penelitian ini adalah angket dan dokumentasi. Angketnya terdiri dari ahli media, ahli materi, ahli bahasa, praktisi (pendidik) dan angket respon siswa. Teknik analisis data menggunakan deskriptif kuantitatif. Hasil penelitian ini menunjukkan tingkat kelayakan materi 89,25%, media 82,8% dan ahli bahasa 88,4%. Maka dari ketiga aspek tersebut dapat disimpulkan bahwa pembelajaran berbasis masalah LKPD berorientasi Keterampilan Berpikir Tingkat Tinggi pada pembelajaran tematik sangat layak digunakan dalam pembelajaran. Respon guru memperoleh skor sebesar 91,18%, dilihat dari angket respon siswa memperoleh skor rata-rata sebesar 81,17% dan mencapai kriteria sangat menarik, artinya LKPD pembelajaran

berbasis masalah berorientasi pada Keterampilan Berpikir Tingkat Tinggi pada siswa sangat menarik. atau sangat layak untuk digunakan.

Kata Kunci: LKPD, Problem Based Learning, Hots

INTRODUCTION

Education has an important role in improving the quality of human resources of a nation. Based on Law Number 20 of 2003 article 3 concerning the goals of national education, namely developing capabilities and forming the character of a dignified national civilization in the context of educating the nation's life. In order to be able to live in today's world, every individual must have the skills and abilities needed in this century. New standards are needed for an individual to have these competencies. According to Trilling and Fadel in (Saraswati, Distri, and Ambarita 2021; Nurliawaty et al. 2017) to realize learning that is in accordance with these educational goals, the competencies that must be possessed by today's 21st century Human Resources, namely 4C include communication, collaboration, critical thinking and problem solving, and creativity and innovation (Arifin 2017; Martini 2018)

The concept of the 2013 curriculum leads to the process of developing learning in accordance

with educational goals to deal with the demands of the times by deepening and expanding material using thematic learning (Ananda and Fadhilaturrahmi 2018; Syaifuddin 2017). Thematic learning is an integrated learning concept by combining several subject topics. Ministry of National Education (2006) states that thematic learning is an integrated learning model using themes to link several subjects so as to provide meaningful experiences for students. The application of thematic learning can make it easier for students to focus on one theme or topic of material. However, the application of thematic learning is still not optimal. Educators in elementary schools still have difficulty implementing thematic learning even though this learning has been implemented for approximately five years (Maya, Yuniarto, and Hidayati 2022).

Based on the results of observations with SDN 1 Negeri Agung Kec. Talang Padang Tanggamus obtained information that in the learning process educators had

difficulty in determining appropriate teaching materials according to the learning needs of students. Educators have not been able to develop practical, innovative, varied teaching materials that can attract students' attention. So far, educators always use textbooks when teaching in class. On the other hand, information and suggestions were obtained from educators that the teaching materials used in thematic learning were not supportive. Teaching materials used by educators during the learning process are in the form of simple printed books. Educators expect teaching materials that can adapt to the 2013 curriculum.

Several previous studies related to teaching materials showed that the use of project-based learning worksheets on the photosynthesis sub-material was declared feasible based on the aspects of validity, practicality, and effectiveness (Saraswati, Distri, and Ambarita 2021; Nurliawaty et al. 2017; Fanani and Kusmaharti 2018; Lailly and Wisudawati, n.d.; Rasimin and Ma'mun 2021; Arief, Maulana, and Sudin 2016). Science Literacy-Based LKPD for Training Critical Thinking

Skills material for growth and development is stated to be valid, practical, and effective to apply to the learning process (Zahroh and Yuliani 2021; Fatonah and Yunianto 2021). Whereas Electronic Student Worksheets (E-Lkpd) Based on Higher Order Thinking Skills (HOTS) are appropriate and meet the criteria for use in learning (E. N. Sari and Susilowibowo 2022; Qiftiyah 2023)

Student Worksheets are one of the media that can be used in the teaching and learning process and can also support the teaching and learning process (Latifah 2016; Qiftiyah 2020). LKPD is a learning tool that can be used in exploring the teaching and learning process that is carried out and can create student activity (D. N. I. Sari, Budiarmo, and Wahyuni 2022). Learning media in the form of Student Worksheets (LKPD) oriented to high order thinking skills is a learning media whose use is intended to optimize teaching and learning activities (Riadi 2016; Noprinda and Soleh 2019) . So far, student worksheets (LKPD) oriented to high order thinking skills for students are known as printed teaching materials. In the

development of Student Worksheets (LKPD) can be presented in the form of not only presenting material, but also equipped with interesting pictures that can enhance or strengthen students' understanding in studying the material presented. To support thematic learning as above, LKPD can facilitate the learning process (Hayati, Budi, and Handoko 2015; Noprinda and Soleh 2019)

Overcoming the problems above, the right solution is to develop a new LKPD. LKPD based on problem based learning (PBL) oriented to high order thinking skills (HOTS) is still relatively new and has not been used in these schools. Based on the explanation above, the researcher conducted a study entitled "Development of HOTS-Oriented PBL-Based LKPD in Class V Elementary School".

METHODS

This study aims to produce HOTS-oriented PBL-based LKPD products for grade V SD. The method used in this research is Research and Development (R&D) which refers to the research design of the Borg & Gall model modified by (Sugiyono 2019),

with the steps in this research namely definition, design, and development.

This research and development methodology is closely related to learning. This research in learning has touched on the problem of product development and design, especially media, teaching materials, and learning systems. We know that PBL-based learning is oriented to high order thinking skills which can be defined as the theory and practice of design, development, utilization, management and evaluation of processes and resources for learning. Therefore, this research seeks to develop learning resources that suit the needs of students (Sugiyono 2019).

The research subjects for HOTS-oriented PBL-based LKPD development research on theme 3 sub-theme 1 were educators and students in class V SDN 1 Negri Agung Kec. Talang Padang Tanggamus. The validation questionnaire assessment was analyzed using the criteria according to Arikunto (2016) as in the following table.

Table 1. Criteria for Validation Test Results

Validity Criteria	Validity Level
81,0%-100,0%	Very good
61,0%-80,9%	Pretty good
41,0%-60,9%	Not good
41,0%-60,9%	Not good

RESULT AND DISCUSSION

This research and development was carried out at SDN 1 Negeri Agung class V with a total of 23 students on February 20, 2023 to find out the attractiveness, convenience and benefits of HOTS-oriented PBL-based worksheets in thematic learning that the researchers had developed. The main results of this research and development are HOTS-oriented PBL-based worksheets in thematic learning with the topic of theme 3 healthy food sub-theme 1 how the body processes food. This development uses research and development (R&D) methods. The steps in this research are defining, designing, and developing.

Needs analysis and introduction

At this stage the researcher defines and determines the terms of development and is often called a

needs or preliminary analysis. The steps of needs analysis and introduction in this study were carried out in several stages, namely Front-end analysis, Concept Analysis, and Specifying Instructional Objectives to be achieved.

This preliminary stage, namely Front-end analysis (Front-end analysis) is carried out to obtain data whether the LKPD that the researcher will develop is needed and needs to be developed. Analysis of the needs of this research refers to observations in the field when conducting interviews with educators. The needs analysis process can be carried out in several ways, namely interviews with teachers of class V thematic subject educators.

Based on the results of interviews that have been conducted by researchers, it was found that in the thematic learning process educators have used printed worksheets and are still limited. Especially in thematic learning theme 3 educators have not used teaching materials based on problem-based learning oriented to high order thinking skills, which should have been in the 2013 curriculum students were introduced to the development of learning media. The

development of HOTS-oriented PBL-based LKPD is urgently needed in order to increase students' learning interest and increase motivation for thematic learning.

The next stage of analysis, namely concept analysis (Concept Analysis) is carried out through interviews to determine the main concepts to be taught, arrange them in draft form and according to the 52 concepts to be taught. Concept analysis aims to identify the important parts to be studied and arrange them in a systematic and relevant form in problem-based learning worksheets oriented to high order thinking skills learning based on preliminary analysis.

The formulation of learning objectives (Specifying Instructional Objectives) is carried out by summarizing the results of the analysis of concepts and tasks to determine the behavioral characteristics of the research object. The set of all these objects is a guide in compiling and designing HOTS-oriented PBL-based worksheets. Based on the results of this analysis, several objectives will be achieved in the HOTS-oriented PBL-based LKPD

for thematic learning, namely students can examine the socio-cultural diversity of society, analyze forms of human interaction with the environment, understand the digestive organs and their functions and maintain the health of the digestive organs, analyze information conveyed by advertising exposure, and understanding scales.

Design

After carrying out the analysis process, the next step is to design the initial product or design a HOTS-oriented PBL-based worksheet on thematic learning on the theme of 3 healthy foods. LKPD is designed in terms of product design, in terms of learning materials that are adapted to the learning objectives developed.

The first step in designing HOTS-oriented PBL-based worksheets is to collect materials for making worksheets (pictures and materials) in the form of word, pdf, and other learning pictures. The next step is to make a product draft and continue with completing the draft in the form of developing activities, determining related examples, and determining

pictures and graphics. The product developed is packaged according to the HOTS-oriented PBL learning syntax.

The first stage is problem orientation, showing preliminary materials related to the material to be discussed. In LKPD, the problem orientation stage contains a brief discourse that contains problems in everyday life. Through the problem orientation stage, students are invited to discover phenomena related to the surrounding environment.

The stage of experimental activity or material observation to solve the problems described earlier. At this stage students are able to organize learning tasks related to the problems or phenomena presented at the previous stage.

The stage of collecting data or information, to explain a problem either in a simple or advanced way. Students are able to carry out individual or group investigations where students are encouraged to collect data or information and carry out experiments to get problem solving.

In the analysis or conclusion stage, students use other strategies to solve problems and make conclusions based on the ability level of students. Students are given directions to carry out reflection and evaluation activities on the investigation of the processes they go through. Students write down the results of activities regarding the material studied. After that, students fill out the evaluation sheet provided. The cover and contents of the designed LKPD product are shown in Figure 2.



Cover

Content section

Development

After the process of making product design worksheets based on HOTS-oriented problem-based learning, the researcher then carried out the stages of Product Feasibility

Assessment. The feasibility of HOTS-oriented PBL-based LKPD development products for thematic learning was assessed by Ifan Awanda, M. Pd PGMI STIT Tanggamus lecturer (material expert), Tyas Abror Huda, M. Pd staff of the Unila FKIP academic division (media expert), and Oktri Wulandari, M. Pd lecturer in PGSD STKIP AL ITB. The validation instrument used is a validation instrument that was prepared using a Likert scale with five answers as criteria. The complete results of validation obtained from experts are as follows.

Table 2 Expert Validation Results

Rated aspect	Σ Score	PSA
LKPD suitability with learning materials	33	82,5%
LKPD content quality	48	96%
Average	89,25%	

Based on the results of validation by material experts in table 2, the aspect of conformity of LKPD with learning materials obtained an average value of 82.5% with the criteria of "very

feasible", in the aspect of quality of the contents of the LKPD, an average value of 96% was obtained with the criteria of "very feasible" ". With the overall average value obtained in the validation of material experts is 89.25% with the "very feasible" criteria.

Table 3 Results of Material Evaluation by Media Experts

Table 2 Expert Validation Results

Rated aspect	Σ Score	PSA
Compatibility of illustrated LKPD with didactic requirements	40	80%
Compatibility of LKPD with construction requirements	43	86%
Compatibility of LKPD with technical requirements	33	82,5%
Average	89,25%	

Based on the results of validation by media experts in table 3, the aspect of suitability of illustrated LKPD with didactic requirements obtained an

average value of 80% with the criteria of "very feasible", in the aspect of suitability of LKPD with construction requirements, an average value of 86% was obtained with the criteria of "very feasible". feasible" and in the aspect of conformity of LKPD with technical requirements a score of 82.5% is obtained with the criteria of "very feasible". With the overall average value obtained in the media expert validation is 82.8% with the criteria of "very feasible".

suitability of LKPD with construction requirements, an average value of 86% was obtained with the criteria of "very feasible". feasible" and in the aspect of conformity of LKPD with technical requirements a score of 82.5% is obtained with the criteria of "very feasible". With the overall average value obtained in the media expert validation is 82.8% with the criteria of "very feasible".

Table 4 Results of Material Assessment by Language Experts

Rated aspect	Σ Score	PSA
Task	13	86%
Communicative	24	96%
Writing	8	80%

Suitability with the level of development of students	10	100%
Use of terms, symbols, or images	8	80%
Average	88,4%	

Based on the results of validation by linguists in table 4, the straightforward aspect obtained an average value of 86% with the criteria of "very feasible", in the communicative aspect, an average value of 96% was obtained with the criteria of "very feasible", the writing aspect obtained a value of 80 % with the criteria "very feasible", on the aspect of conformity with the level of development of students obtained a value of 100% with the criteria "very feasible", and the aspect of using terms, symbols, or images obtained a value of 80% with the criteria "very feasible". With the overall average score obtained in the validation of linguists is 88.4% with the criteria of "very feasible".

Design Revision

At this stage, after the product design has been validated through assessments from the validators,

material experts, media experts and linguists. The researcher revised the results of the product design developed, namely problem based learning worksheets based on hots-oriented thematic learning based on input and suggestions from the validation team of mathematicians, media experts and linguists. The suggestions/inputs for improvement are as follows:

Material expert suggestions/improvements Table 5
Suggestions for Improvement of Material Expert Validation

No	Suggestions/feedback
1	The use of the preface is corrected into Foreword
2	In the learning section 3, please look again at the layout

Advice/input of media experts

Table 6. Media Expert Validation Improvement Suggestions

No	Suggestions/feedback
1	Eliminate columns/boxes that are not important
2	The color of the image is adjusted to the material

Expert advice/input

Table 7 Suggestions for Improvement Validation of Language Experts

No	Suggestions/feedback
1	Fix the font that is still messy
2	Fix the words that are still typo

Product trials

The trial phase carried out by researchers was a trial of educator practitioners and large group trials but before carrying out the trial the research also involved educators (teachers) at SDN 1 Negeri Agung Kec. Talang Padang Tanggamus, namely Mrs. Rodiyah, S.Pd, to assess the product developed from the aspect of the LKPD content and the accuracy of the material and questions in the LKPD. Consideration of researchers to involve educators in assessing products because educators are prospective users and implementers of learning.

Test educator practitioners

The results of the educator's assessment of the products

developed in the form of problem-based learning worksheets on thematic learning can be seen in

Table 8 Results of Material Assessment by Educator Practitioners

Assessment Aspects	Max Score	Total score
A. Quality of LKPD content	20	18
B. Serving	16	15
C. Language	16	14
D. Appearance	16	15
Total Score	59	
Percentage	91,18%	

Percentage 91.18% Based on table 8 of the assessment by SDN 1 Negeri Agung educators, an average percentage of 91.18% is obtained with the criteria of "very feasible" and can be used. The results of product validation analysis by practitioners can be seen in detail in the appendix

Field trials

After the product has gone through the validation stage by experts and has been repaired, then the product is tested on students at SDN 1 Negeri Agung consisting of 23

students. This trial aims to test the attractiveness of the HOTS-oriented PBL-based worksheet product developed. At the end of the trial, students were given an attractiveness questionnaire from learning to use problem-based learning worksheet-based HOTS-oriented products in thematic learning.

Based on the analysis of the results of field trials with 23 students, an average value of 81.17% was obtained with the interpretation criterion achieved, namely "very interesting", this means that problem-based learning worksheets are HOTS-oriented in thematic learning developed by researchers having criteria very interesting to use as teaching materials at SDN 1 Negeri Agung Kec. Talang Padang Tanggamus. This means that the picture story books developed by the researcher have the criteria of "very interesting" to be used as learning media in SD/MI.

CONCLUSION

The conclusions obtained from the results of research and development are as follows:

1. HOTS-oriented PBL-based worksheets. The feasibility level for materials is 89.25%, media is 82.8% and for linguists is 88.4%. So that from these three aspects it can be concluded that it means that LKPD based on Problem Based Learning oriented to High Order Thinking Skills in Elementary School Students is very suitable for use in learning.
2. HOTS-oriented PBL-oriented LKPD Educator Responses get a score of 91.18%, seen from the student responses questionnaire get an average score of 81.17% and have achieved very interesting criteria, which means Problem Based Learning LKPD oriented High Order Thinking Skills in Elementary School Students are very interesting or very appropriate to use.

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