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DEVELOPING WORKSHEET BASED ON HOTS FOR SIXTH GRADE ELEMENTARY SCHOOL STUDENTS IN THE SECOND SEMESTER

Pengembangan Lembar Kerja Berbasis HOTS untuk Siswa kelas enam Sekolah dasar di Semester dua

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ABSTRACT

This study aims to develop a HOTS-based student worksheet for grade 6 elementary school students. This study uses Design and development (D&D). It applies the ADDE (Analysis, Design, Development, and Evaluation) model, which Rich and Klein found in 2007. To obtain data using the subject in grade 6 elementary school. The method used is quantitative and qualitative in finding data. The instruments used in this research are syllabus, observation sheet, interview guide, expert judgment rubric, and questionnaire. The subject of this research is a teacher and student. The product results, which is still a prototype, showed that it is very relevant from the expert jury. In looking for quality, six users were taken, including one teacher and five students who played a role in assessing the quality of the developed worksheet. The results given from the quality indicate that the student worksheets can be categorized as an "Good worksheet," which means that the student worksheets can increase students' ability to think higher-order (HOTS).

Keywords **:** *Elementary, HOTS Based English Learning, Worksheet*

ABSTRAK

Penelitian ini bertujuan untuk mengembangkan LKS berbasis HOTS untuk siswa kelas 6 SD. Penelitian ini menggunakan Design and development (D&D). Ini menerapkan model ADDE (Analysis, Design, Development, and Evaluation) yang ditemukan Rich dan Klein pada tahun 2007. Untuk memperoleh data menggunakan mata pelajaran di kelas 6 SD. Metode yang digunakan adalah kuantitatif dan kualitatif dalam mencari data. Instrumen yang digunakan dalam penelitian ini adalah silabus, lembar observasi, pedoman wawancara, rubrik penilaian ahli, dan angket. Subjek penelitian ini adalah guru dan siswa. Hasil produk yang masih berupa prototype menunjukkan sangat relevan dari juri ahli. Dalam mencari kualitas diambil enam pengguna, termasuk satu guru dan lima siswa yang berperan dalam menilai kualitas LKS yang dikembangkan. Hasil yang diberikan dari kualitas tersebut menunjukkan bahwa LKS dapat dikategorikan sebagai "Good Worksheet", yang berarti LKS dapat meningkatkan kemampuan berpikir tingkat tinggi siswa (HOTS).

Kata Kunci **:** Sekolah dasar, Pembelajaran berbasis HOTS, Lembar kerja

PENDAHULUAN

Learning has entered the industrial revolution 4.0. It is marked by the presence of technology that makes it many people easier to learn. Some evidence of technologies is artificial intelligence, networking, and virtual technology that develops over time (Lase, 2019). Learning in the 21st century requires students to master the character of 4C (Zubaidah, 2018). The characters of 4C are divided into communication, collaboration, critical thinking, and creativity (Rahman, 2018). Communication is defined as an interaction between students. It obtains accurate information from both parties (Ariyana, Yoki, Pudjiastuti, Ari, Bestary, Reisky dan Zamromi, 2018). Collaboration is defined as working in a team or working with others (Zubaidah, 2018). Critical thinking is defined as a more critical way to think about things that are still logical or natural (Wahid & Karimah, 2018). Meanwhile, creativity is defined as the ability to think creatively about overcome problems or to be able to produce something new (Sugiyarti et al., 2018).

In education in Indonesia, most students have not been able to apply the characters of 4C, which makes them unable to think critically (Rachmedita et al., 2020). Thinking critically for the student means that the students can understand the concepts given and apply the previously received information (Zubaidah, 2017). Since many elementary schools have not used the 4C characteristics, it is difficult for them to produce students who can think at high levels (Kurniati et al., 2016). There are two types of thinking skills on taxonomy bloom: high order thinking skill and low order thinking skill (Sutrisno et al., 2018). High-order thinking skills, or HOTS, is one of the conditions used to balance education in the 21st century (Ariyana, Yoki, Pudjiastuti, Ari, Bestary, Reisky dan Zamromi, 2018). Besides HOTS, there is also a lower level of thinking or better known as LOTS (Triyanto et al., 2017). The difference between HOTS and LOTS is the way the concept needs to be understood. HOTS requires more critical thinking than LOTS (Goodson & Rohani, 2015)

In the preliminary observation, the teacher said that the teacher only focused on LOTS activity in paper-based tests, reading, and others. According to the teacher, it was essential to apply HOTS to children still developing, especially in elementary school, but difficult to

implement. The other obstacles were in implemented HOTS because of the lack of support in the worksheet or book. The book only focuses on knowledge (C1), understanding (C2), and application (C3). At the same time, HOTS should concentrate on learning activities which include analysis (C4), evaluation (C5), and creation (C6). Education in the 21st century must now be HOTS-based, where students competed in real life and advance learning 4.0. The existence of HOTS in activities carried out with attractive designs motivated students to learn more critically English skills in everyday life and with support from schools in developing learning activities in teaching English.

Based on preliminary interviews, it can be found obstacles regarding the application of HOTS. Teachers themselves are still confused about the application of HOTS, which still relies on the application of LOTS, such as reading and giving assignments without activities that make students think critically. Teacher learning is currently still in the form of a paper-based test to include HOTS in their education. It was making it visible that there is a lack of performance in improving HOTS goals in the current era. It is also due to the lack of information that supports teacher performance in teaching and applying HOTS in learning activities

METODE PENELITIAN

Design and development (D&D) are used in this research. The product in HOTS-based research English learning activities that produced uses the ADDE model (Analysis, Design, Development, and Evaluation) Richey and Klein (2007). They said that research design types using design and development are used to develop and produce specific products. Several steps were used in this research as below:

Illustration of Richey & Klein D&D

Model

In analysis, the observation was done to see SDN 1 Banyasuri, and interviews would be conducted with teachers who taught English. The purpose of observation is to find out the information related to data that is used as support. In analysis, the researcher needs the syllabus for sixth-grade elementary schools, especially in the second

semester, to adjust the subject matter and the information that would be analyzed.

After the analysis, the next step was to build a worksheet based on HOTS and include subjects and materials from the syllabus analysis. The design referred to the teacher's teaching materials. It was developed through appropriate learning activities, particularly know with high-order thinking skills.

The next step after the design is to develop the worksheet based on the design that has been made. The product based on the development is still in terms of a prototype. The experts assessed its importance in the initial draft of a student worksheet developed regarding its relevancy. The result from expert judgment was used as the revision for the initial draft of the product. The product still develops until it becomes a final product in terms of the worksheet.

The last step of ADDE is evaluation. The purpose of the evaluation is to gain the effectiveness of the product that has been made before. In evaluation, the product was reviewed by expert judgment, a teacher, and five students from sixth-grade elementary school student at SDN 1 Banyuasri. The expert judgment and questionnaire were used to gain the product's quality. For the review was used questioner in the form of "Google Form," which the questions are related to the eligibility of the product.

HASIL DAN PEMBAHASAN

The researcher used the Richey and Klein (2007) design development process for creating a student worksheets book for a sixth-grade primary school in the second semester. Analysis, design, development, and evaluation were the four steps in total, each of which is discussed below.

1. Analysis

The data was gathered through observation to establish the sources that teachers use to assist students in improving their higher-order thinking skills. The observation sheet was used to examine the teacher's teaching method and the media. The last step was to go over the syllabus and decide on a theme for the students' worksheet. The researcher also observed the teacher's textbook. In this step, the study's basic competence would be established to assist the researcher in constructing the product using observation sheets. As a result, the data from the observation sheet and the syllabus of sixth-grade

primary school students need to be analyzed.

2. Design

The blueprint was created after the product was built based on the syllabus analysis. By entering the chapter number and material in the end product, namely the students' worksheet book, the blueprint is created based on the previously outlined analytical syllabus. Some of the competencies in the syllabus are not used to make it appropriate for the level of the sixth-grade student.

3. Development

The students' worksheet was create based on the blueprint. After the product was design, the next step is to develop it. CorelDRAW 2020 software was used to create the students' worksheet book.

4. Evaluation

Two types of expert evaluation were used for the students' workshop book: the validity of content and the quality of judgment. In addition to the use of a professional evaluation sheet, there was also user response. The two types of users that are reviewed are teachers and students

A. Content Validity Judgement

The content validity judgment was given for two judges, namely, JE 1. and JE 2. The expert was an English Language Education lecturer at BALI, who was also a material development expert. In the content validity assessment, the expert judges used 32 criteria to determine the students' relevance. In this phase, the form of expert judgments was examined using the Gregory formula. The following is the Gregory formula.

Gregory Formula for Content Validity

		Judge I	
		Irrelevant	relevant
Judge II	Irrelevant	(A)	(B)
	relevant	(C)	(D)

In the table of Gregory formula, column A meant that the first judge and second judge disagree with the item. Column B means that the first judge agrees and the second judge does not agree with the item. For column C, the first Judge does not agree, and the second judge agrees with the item. Column D means that the first Judge and the second Judge 2 agree with the item.

The content validity score is obtained from the formula D/(A+B+C+D).

According to the validation assessment, the panel of experts of the contents of the 32 credibility standards and the content validity shall be equal to 1.

Score	Criteria
X ≥ 144	Excellent
112 ≤ X < 144	Good
80 ≤ X < 112	Average
48 ≤ X < 80	Below Average
X < 48	Poor

B. Quality Judgement for Expert

Each expert judge had been given a product evaluation form to evaluate the quality of the HOTS-based English activity book that has been created. Judges are chosen based on their experience with HOTS-based English activities, particularly those concerned with HOTS-based English activities. The expert evaluation is based on standards adopted from the BSNP good book as cite from Suryani, (2018). Expert judgment is used to evaluate the five aspects, each consisting of several items that must be considered.

The expert judgment scale was submitted to education experts for evaluation after the researchers tested it on students. For the expert judgment, used four experts to fill in, JE 1, as the first expert, the second expert is JE 2., the third expert J3., and the last expert is JE 4. After the expert assessment, the researcher used the formula adapted from Nurkancana & Sunartana (1992) as a guide.

The Criteria in Rating the Quality of Product

Based on the expert evaluation scale results, the researcher discovered that the first expert's total score was 139. It could be classified as a" good worksheet," The second expert's total score was 138 points, which could be classified as a "good worksheet." The third expert gave a total score of 138 points, which could be classified as a "good worksheet," and the fourth expert gave a total score of 158 points, classified as an "Excellent worksheet."

C. Quality Judgement for User Review

Each user review expert had been given a product evaluation form to assess the developed HOTS-based English activity book quality. SDN 1 Banyuasri, Buleleng teachers and students provide feedback. The questionnaire has ten items. This rubric has a maximum score of 50 points and a

minimum score of 10 points. The researchers used a formula adapted from Nurkancana and Sunartana (1992) as a guide to measuring the assessment results.

A user review conducted on one of the teachers and students shows that the teacher has a total score of 49 for the assessment of the worksheet. Five students conducted the user reviews with three different scores and two with the same score. The scores include the following. The first student has a score of 47, the second student has a score of 48, the third student has a score of 44, the fourth student has a score of 49, and the fifth student has a score of 49. Teachers who give a score of 49 to the worksheet can be said to be "excellent worksheets." The first student to give a score of 47 can be said "Excellent worksheet." The second student gave a score of 48, and it can be said, "Excellent worksheet." The third student gave a score of 44, and it can be said, "Good worksheet." The fourth and fifth students gave a score of 49, and it can be said "Excellent worksheet."

The findings are discussed in the following section. The topic of discussion was the creation and quality of HOTS-based worksheets for Sixth-grade students in the second semester.

The findings show that HOTS in the worksheets at SDN 1 Banyuasri still lacks emphasis on HOTS. In learning, it is found that many activities in the worksheet still apply LOTS. The books used by teachers still tend to focus on “remembering (C1), understanding (C2), and applying (C3)”, while the purpose of HOTS should be to apply “analyzing (C4), evaluating (C5), and creating (C6). Because of this problem, it is necessary to develop HOTS-based activities for students for grade 6 semester 2. With HOTS, it is also intended that student will overcome the problems they face in real life. Most teachers in Indonesia only apply to the extent of LOTS in terms of the type of questions, reading texts, and others. It makes the outcomes received do not match the desired results in this era (Rapih & Sutaryadi, 2018).

In the analysis syllabus, it is found that the syllabus used is not following the topic of the book used. The syllabus discusses four topics: "responding and giving instruction, asking and giving information, describing people and objects, and greeting cards." Meanwhile, the applied book is different from the syllabus. It

makes the learning carried out not following the desired basic competencies. It is one of the causes for teachers not being able to develop activities based on LKS. With these problems, worksheets are developed by looking at the syllabus needed. It makes that the objectives of the syllabus are following students and can also improve students' thinking in the form of HOTS. In making these worksheets, they use the help of the CorelDRAW 2020 application, which does design work

Designing a product takes several stages for its development, such as looking for images, designing, etc. In searching for images, use the website www.freepick.com to obtain the required images. The website provides images that are free to download with a license, so they are safe to quote. In making a worksheet activity, several pictures are collected into one exciting activity.

Development is carried out following the problems identified and the syllabus employed. There were continuous revisions and expert judgment evaluations throughout the development process to form a book based on HOTS and following the objectives. During the product development process, four validators are used to provide value. The four outcomes are as follows: The researcher discovered that the first expert's total score was 139 points, indicating that the worksheet was "Good worksheet." The total score of the second expert was 138 points, which could be classified as a "Good worksheet." The third expert assigned a total score of 138 points, indicating a "Good worksheet," The fourth expert assigned a total score of 158 points, indicating an "Excellent worksheet."

Following validation following expert judgment guidelines, the product is brought to school and evaluated by one teacher and five students. A user review conducted on one of the teachers and students shows that the teacher has a total score of 49 for the assessment of the worksheet. The user reviews were conducted by students using five students who have three different results and two of the same results. The scores include the following. The first student has a score of 47, the second student has a score of 48, the third student has a score of 44, the fourth student has a score of 49, and the fifth student has a score of 49. Teachers who give a score of 49 to the worksheet can be said to be "excellent worksheets." The first student

to give a score of 47 can be said "Excellent worksheet." The second student gave a score of 48, and it can be said, "Excellent worksheet." The third student gave a score of 44, and it can be said, "Good worksheet." The fourth and fifth students gave a score of 49, and it can be said "Excellent worksheet."

Current student worksheets should be flexible and fit the objectives of the syllabus. At this time, 21st-century learning must be able to create student characters who can apply 4C learning. 4C can only be applied by conducting HOTS-based learning such as products that have been made as above. By confronting real questions, students become more critical in thinking in the context of reality. The influence of Industrial Revolution 4.0 is that the student should be balancing themselves with the development of technology to attend the coming era. To balance, it can use 21st-century learning, which is in line with the existence of the 4.0 industrial revolution, and it is in line with the needs linked to a digital lifestyle (Yahya, 2018).

SIMPULAN DAN SARAN

The HOTS-based English learning students' worksheet was created as a learning medium for sixth-grade elementary school students in SDN 1 Banyuasri during the second semester. As a research design, the ADDE model was used in this development, consisting of four stages: analysis, design, development, and evaluation. As a result, a second-semester worksheet for sixth-grade elementary school students consisted of four topics from four basic competencies based on the syllabus analysis. The students' worksheet created includes a cover, preface, table of contents, sub-topics, introduction to the topics, instructions, and worksheet activities.

Worksheets were created by first analyzing the teacher's books as well as the syllabus. Following the completion of the analysis, it is developed again based on the blueprint created to make providing content for the product easier. After that, the project continued by redesigning the book in a prototype using the CorelDRAW 2020 application. Following that, the product is evaluated and then revised again if any errors are discovered. Following the completion of the product by the contents, the process continued by presenting the prototype to the teacher. If there is a revision, the teacher assessed the product and revise it

again. After completion of the assessment stage, the teacher proceeded with the assessment of the students themselves. The purpose is to order to see the feedback provided by the five students. The product provided is still in the form of a prototype and the COVID-19 pandemic; the research is still being conducted on a limited scale.

The content validity results from two experts were categorized as "Relevant," and the mean score from the experts' judgment total point was 143.25, indicating a "Good Worksheet." The prototype product that had been developed received a mean score of 47,66 from the users' reviews (teacher and students), and it can be classified as an "Excellent worksheet." However, based on all of the above expert and user tests, the researcher concluded that the product still needs to be developed and more creatively to improve the quality of this HOTS-based worksheet.

1. For the students

This worksheet can be used to improve the quality of students' problem-solving thinking. The activities provided can help students improve their critical thinking skills. HOTS can also improve student collaboration and creativity with this.

2. For the teacher

The teacher can use this worksheet as a guide to help students think more critically. The learning is also very innovative, and it is, of course, in the form of HOTS.

3. For the researcher

This research can be used to continue much more creative developments. This study focuses on HOTS, which improved over time.

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