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## The Development of Hots-Based Student Worksheet on Economics Lesson

Al Findah Nur Lailiyah <sup>1</sup>

Riza Yonisa Kurniawan <sup>2</sup>

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### Abstract

This study developed a Participant Student Worksheet on Higher Order Thinking Skills (HOTS) in class XI high school economic subjects. The purpose of this study is to find out the feasibility of the student worksheet, describe the responses of students and describe the high-level thinking skills of students. This type of research is Research and Development (R & D) using a 4D model which includes the stages of defining, design, develop and disseminate. In this study carried out until the end of the dissemination (disseminate). The results of this study consisted of 1) LKPD developed with feasibility assessments from material experts (content and presentation) of 89% categorized as "very feasible", 74% linguists categorized as "feasible" and graphic experts at 90% categorized as "very feasible" " Based on these data, the HOTS student worksheet developed was considered valid. 2) This student worksheet was piloted to 20 students of class XI IPS at SMA Wijaya Putra Surabaya from students' response questionnaires obtained an average of 88% with very good criteria 3) High-level thinking skills of SMA Wijaya Putra Surabaya students obtained an average score amounting to 66.8 in the good category.

**Keywords:** Student Worksheet, Higher Order Thinking Skills, HOTS

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<sup>1</sup> Department of Economics Education, Universitas Negeri Surabaya, Indonesia,

**Correspondence:** [allailiyah@mhs.unesa.ac.id](mailto:allailiyah@mhs.unesa.ac.id)

<sup>2</sup> Assist. Prof.Dr., Department of Economics Education, Universitas Negeri Surabaya, Indonesia,

ORCID: 0000-0003-2419-210X, Email: [rizakurniawan@unesa.ac.id](mailto:rizakurniawan@unesa.ac.id)

## **Introduction**

The era of globalization demands that people think critically and innovatively. Competition is getting tougher in the world of work by prioritizing quality. The future faced by students changes with time depending on technological developments and economic developments that occur. The government in Indonesia has various ways to improve the quality of human resources, one of which is through education. Various schools in Indonesia to meet the demands of the age of the 21st century are now starting to apply high-level thinking skills. This action is following the characteristics of 21st-century community skills. According to the partnership of 21st-century skills, 21st-century students or students must have the ability to develop their abilities that are focused on developing Higher Order Thinking Skills (HOTS) (Basuki & Hariyanto, 2014). Changes to the curriculum are always done to adjust to the development of the times so that quality standards are following the demands of the workforce. The government's efforts to standardize education with the latest curriculum, namely the 2013 curriculum.

The 2013 curriculum uses a scientific approach where the learning is centered on students is no longer the dominant educator to improve creativity and independent thinking. Permendibud No. 103 of 2014 concerning learning in basic education and secondary education explained that the scientific learning process must go through 5 stages, namely first observing, both questions, the third stage gathering information, the fourth stage reasoning, and the last communicating. Of course in this concept in learning students are active and minimize the role of the teacher.

The 2013 curriculum requires teaching materials to support the learning process so that learning objectives can be achieved. In class, learning requires teaching materials to support the implementation of the learning process. Innovative and interesting teaching material is a guide and is very useful for each educator (Prastowo, 2015). To be more specific, teaching materials that can be used are one of them is student worksheet (Student Worksheet). student worksheet it self is used as a guide for students in investigating and solving problems in the learning process (Trianto, 2012).

The objectives in the preparation of the student worksheet include providing teaching materials that make it easier for students to interact with the material provided, presenting tasks that enhance students 'understanding of the material provided, train students' independence of learning and facilitate educators in giving assignments to students (Prastowo, 2015). So that student worksheet can be used in learning to train students' independence, besides minimizing the role of educators in providing learning.

The process of teaching and learning is found by students who do not achieve learning outcomes that are equivalent to their intellectual capacity, there are students whose learning outcomes are low but are seen from the high intelligence, and vice versa. Therefore, the level of intelligence is not the only factor that determines a person's success, because other factors influence it (Rosiana & Suryawati, 2015). Therefore, educators are required to have creativity and innovation to create teaching materials to handle themselves by the conditions in class and the needs of students.

Based on observations made at SMA Wijaya Putra Surabaya, information about teaching materials used in the form of textbooks and student worksheet was obtained. The textbook used in high school is following the curriculum because it was obtained from the government. Whereas the student worksheet used is obtained from publishers who lack training in high-level thinking skills of students and support the

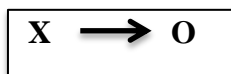
implementation of the 2013 curriculum demands. So far, students only use student worksheet to work on multiple-choice questions and essays, most of the answers are only copied in the material provided. student worksheet that is used by educators as supporting the learning process should be able to improve high-level thinking skills (Higher Order Thinking Skills). The existence of these teaching materials can sharpen students to think critically and think creatively in solving a problem. The learning process that trains high-level thinking will have a good impact on students considering HOTS questions have been applied to national examinations. Although the Ministry of Education and Culture still imposes a 10% percentage on HOTS on national examinations, there should be an increase of 20% (Zubaidah, 2019). Familiarizing high-level thinking with students is still important to do to improve the quality of the students themselves.

Based on the phenomenon in SMA Wijaya Putra Surabaya, it is necessary to develop student worksheet that is following the demands of the 2013 curriculum which encourages high-level students to think. This is supported by the research of Khasyyatillah & Irianti, ( 2016) that HOTS-based worksheets will help improve students' high-level thinking by helping them find concepts, then applying and integrating the concepts found. If the use of HOTS-based student worksheet learners can build creative and critical thinking skills and problem-solving abilities. With this process, learning is following the demands of the 2013 curriculum. This is one form of an effort to support the government in improving education standardization in Indonesia. Whereas Rosiana & Suryawati, ( 2015) stated that the overall response of students to HOTS-based worksheets was developed so well that it was potential as a learning resource in the learning process and the process data would be obtained on how students' critical and creative thinking level. The purpose of this research to analyze (1) the feasibility of HOTS-based Student Worksheet on economic subjects at SMA Wijaya Putra Surabaya ?; (2 ) students respond to learning by using HOTS-based Student Worksheet on economic subjects at SMA Wijaya Putra Surabaya; (3) the students' high-level thinking abilities in the basic competencies analyzing the price index and inflation in SMA Wijaya Putra Surabaya.

### **Methods**

This research uses a type of research and development with a 4D model (define, design, develop, disseminate) According to Sugiyono ( 2016) "R & D development research is a research method that aims to create a product, then the product is tested for effectiveness".

This study applies a single one-shot case study design trial, researchers use the trial to know student learning outcomes to determine how students are capable of.



### **Model *Single one-shot case study***

**Sumber:** Sugiyono (2016, p. 498)

Before being tested, the student worksheet was validated by material validators, languages, and graphics. The types of data obtained are qualitative data obtained from the results of expert review, and quantitative data obtained from expert validation scores, student response results and high-level thinking skills of students. The data

collection instrument used was an open questionnaire and a closed questionnaire. Open questionnaires are used for expert review sheets and closed questionnaires are used for expert validation sheets and student response questionnaires. Data analysis techniques from questionnaires from experts will be processed in a qualitative descriptive way to add suggestions and inputs related to the content, presentation, graphics, and language that will be used in the student worksheet, while the validation sheets of experts and students as responders through questionnaires will be a quantitative process. Data is processed by calculating the value given by the validator on each indicator of the assessment after that calculates the percentage that will be interpreted using a Likert scale, while the response of students with scale (Riduwan, 2016).

## **Findings**

### **Feasibility of HOTS-based Student Worksheets**

Feasibility data The student worksheet is obtained from the assessment given by experts at the time of validation. The validation results are then analyzed by quantitative descriptive techniques. The results of the material validation analysis were 89%, language validation was 74% and graphic validation was 90%.

### **Student responses to HOTS-based student Worksheets**

Student response data obtained by the researcher at the time of the trial at SMA Wijaya Putra Surabaya and at the time of the distribution at Cerme 1 Public High School obtained an average of 88% and 87% respectively. This shows that students' responses to student worksheet provided by researchers from the components of content, presentation, language, and graphics are very interesting for them. However, when the learning process in their discussion was difficult to find data on the internet which took time in question number one, the data on the price of goods obtained by each group was different and in number three the participants should give their opinions and suggestions about what policies the government should do to overcome inflation based on the material in numbers one and two, but many students only mention how to overcome inflation. Therefore educators in the learning process must provide clear direction in guiding the execution of tasks so that the data obtained, the calculation results can be the same and do not misinterpret the question instructions.

It can be concluded that the response of students at SMA Wijaya Putra Surabaya is higher than the response of students in Cerme 1 Public High School, 88% each with 87% there is a difference of 1% indicating the difference is not too significant and the response of students from both schools shows a very both during the learning process using HOTS-based LKPD, but the role of the teacher in providing direction in the use of the student worksheet must be clearer so as not to give rise to several different perceptions of each student.

### **High-level thinking ability of students (HOTS)**

In research after 10 students have worked on the questions obtained by the results with an average value of 66.8, HOTS ability can be known or high-level thinking of students in SMA Wijaya Putra Surabaya with the Good category. Then when the spread at Cerme 1 Public High School obtained an average value of 73.4 in the good category.

## Discussion

### Feasibility of Student Worksheets

**Table 1.** Total Value of Overall Results of Expert Validation

Aspect	$\Sigma$	highest Score	%	Category
Material expert	178	200	89%	Very Worthy
Linguists	37	50	74%	Worthy
Graphic artist	82	90	90%	Very Worthy
<b>Total</b>	297	340	87%	Very Worthy

Source: processed by researchers (2019)

The feasibility of HOTS-based student worksheet is validated by experts namely material experts, linguists, and graphics experts. The assessment instruments used in the validation were taken from the 2014 National Education Standard Body (BSNP) which was processed by researchers. The material validation will be assessed from various components namely first, the content feasibility component which consists of material coverage, the accuracy of facts, updates and contexts and HOTS skills. Second, the feasibility of a presentation consisting of presentation and presentation techniques. The material validator will be conducted by the Economics Education Study Program lecturer and Wijaya Putra Surabaya High School economics teacher. Language validation will assess the component of language feasibility which consists of the suitability of the language with the development of students, the ability of language to motivate, language fluency, conformity with rules, and the use of terms and symbols. Language validation was submitted to the Indonesian Language Education Study Program lecturer from the Faculty of Language and Art. While graphic validation will assess the first several components, the feasibility of graphics for the size of the student worksheet. Second, the student worksheet leather design includes the layout of the student worksheet cover, student worksheet cover typography, and the student worksheet cover illustration. Third, design the contents of the student worksheet on the layout of the student worksheet contents and the typography of the contents of the student worksheet. Validation by lecturers from the Education Faculty majoring in Curriculum and Educational Technology Development. Data obtained from the results of expert validation will be analyzed quantitatively by percentage. Quantitative data obtained will be converted into percentages and will then be described in the evaluation criteria table to determine the feasibility of the developed student worksheet.

The results of the validation can be elaborated starting with material validation, the percentage of the feasibility of the overall material component is 89%. According to Riduwan (2016), the development of student worksheet can be said to be feasible if the percentage obtained is  $\geq 61\%$ . Therefore, it can be concluded that the feasibility of the material component of the LKPD has the criteria "Very Worthy" to use.

Validation of language feasibility as a whole gained 74%, which can be said to be feasible because the development of student worksheet obtained a percentage of  $\geq 61\%$  (Riduwan, 2016). Thus, it can be seen that the language components of HOTS-based student worksheet have the criteria "Eligible".

Whereas the components of HOTS-based student worksheet can be categorized as "Very Worthy" to be used because they get a percentage of 90%. According to Riduwan (2016), the development of student worksheet can be said to be feasible if the

percentage obtained is  $\geq 61\%$ .

From the description above, language validation obtains the lowest validation from material validation and graphics. Indeed, in the preparation of sentences in the developed student worksheet it was lacking in facilitating students' understanding of the instructions on how to do the questions. After all three validations can be summarized and from the three validations, the overall average percentage is 87%. student worksheet with a percentage of 87% can be categorized as "Very Eligible" if the percentage obtained is  $\geq 61\%$  (Riduwan, 2016). Thus, the development of HOTS-based student worksheets on economic lessons at SMA Wijaya Putra Surabaya with the category "Very Worthy" as teaching material. Similar research was also carried out by Isra Khasyyatillah et al. (2016) with the title "Development of Student Worksheets on Higher Order Thinking Skills (HOTS) on Momentum, Impulse and Collision Material of Class XI / Semester 1 High Schools". The aspects assessed included graphic aspects and presentation, language, and contents of HOTS LKS. The results of the data analysis showed that each aspect obtained an average score in the range of 3.4-4 high and very high categories. Based on this, the HOTS student worksheet developed was considered valid.

### **Student responses to HOTS-based student Worksheets**

The response of students in this study is obtained when students finish working on the task in the worksheet. The researcher distributed the questionnaire responses then filled in by the students. This response is given to 20 students. Retrieving the number of respondents is based on the opinion of Sadiman (2011) that the ideal limited trial is between 10-20 students if less than 10 it is not able to describe the target population, but if it exceeds 20 data also results in less useful data in analysis small group evaluation.

The response of these students is in the form of a questionnaire consisting of 10 items of questions by including the components of the content, components of presentation, language, and the graphic component of the LKPD. In the questionnaire that has been provided containing questions and answers, by choosing the answer "Yes" that will get a score of 1 and if answering "No" the score is 0. The results of student responses will be analyzed qualitatively to describe the views of students on the developed student worksheet.

The response of researcher students obtained two data, from the responses of SMA Wijaya Putra Surabaya students and at the time of the distribution at SMA Negeri 1 Cerme. Responses from SMA Wijaya Putra Surabaya students as a whole got a percentage of 88% with the first breakdown, content eligibility of 98%. This shows that the material in the student worksheet is easy for students to understand. Second, the feasibility of the presentation reaches a percentage of 88% which is categorized as "Very Good". This shows that the appearance of the developed student worksheet has interesting material, images, tables and can improve students' learning motivation. Third, the overall language component gets a percentage of 82%. This shows that the preparation of sentences, the use of language and terms in the student worksheet developed is easy for students to understand. Fourth, the graphical component is 88%. This shows that the developed Basuki, I., & Hariyanto. (2014). Learning Assessment. Bandung: Teenager Rosdakarya. has an attractive cover design and attractive content design. Of the four components outlined in the "Very Good" category. According to Riduwan (2016), the percentage of  $\geq 81\%$  is included in the "Very Good" category.

Whereas in SMA Negeri 1 Cerme the percentage of overall responses was 87%. With such results, it can be categorized as a very good response from students. The percentage with the first details, the eligibility of the contents is 90%. This shows that the material in student worksheet is easily understood by students. Second, the feasibility of presentation reaches a percentage of 85% which is categorized as "Very Good" which shows the appearance of the student worksheet that the researcher has developed in terms of material, images, tables that are interesting and enhance the learning spirit of students. Third, the overall language component gets a percentage of 88%. This shows that the compilation of sentences, the use of language and terms in the student worksheet developed is easy for students to understand. Fourth, the graphical component is 88%. The percentage shows that the LKPD developed has an attractive cover display and attractive content design. Of the four components outlined in the "Very Good" category. According to Riduwan (2016), the eligibility criteria for student worksheet can be said to be feasible for obtaining a percentage of more than 61%.

When researchers conducted trials in their discussion section, they had difficulty finding data on the internet that took time in question number one, the data on the price of goods obtained by each group was different and in number three the participants should give their opinions and suggestions about what policies to do the government to deal with inflation is based on the material in numbers one and two, but many students only mention how to deal with inflation. Therefore educators in the learning process must provide clear direction in guiding the execution of tasks so that the data obtained, the calculation results can be the same and do not misinterpret the question instructions.

It can be concluded that the response of students at SMA Wijaya Putra Surabaya is higher than the response of students in SMA Negeri 1 Cerme, 88% each with 87% there is a difference of 1% indicating the difference is not too significant and the response of students from both schools shows a very both during the learning process using HOTS-based student worksheet, but the role of the teacher in providing direction in the use of the student worksheet must be clearer so as not to give rise to several different perceptions of each student.

### **High-level thinking ability of students (HOTS)**

The results of the work of students from the tasks presented to find out the ability of high-level students or commonly called HOTS, which consists of 10 tasks that each task has a maximum value of 10. The researcher obtained two data from HOTS abilities or high-level thinking from SMA Wijaya Putra Surabaya and at the time of the distribution at SMA Negeri 1 Cerme with the respondents as many as 20 students. The results of the workmanship of the students from the completed tasks will be assessed and the results categorized based on the interpretation criteria of the score of Purbaningrum (2017), said high-level thinking skills are criteria "Enough" if the value or score is more than 41.

The ability of high-level thinking students of Surabaya Wijaya Putra High School students and in Cerme Negeri 1 High School is less in the analyzing section, students have difficulty understanding the intentions of the commands in the tasks that exist in the student worksheet and linking the problems with each other. But seen from the average value of both still categorized as "Good" SMA Wijaya Putra Surabaya with an average value of 66.8 while the high-level thinking ability of SMA Negeri 1 Cerme students with an average value of 73.4.

From what was described above the high-level thinking skills of SMA Negeri 1 Cerme 1 students were higher than those of SMA Wijaya Putra Surabaya High School students (73.4 > 66.8).

### **Conclusion**

The research on the development of HOTS-based student worksheets uses a 4D model, namely Define, Design, Develop and Disseminate (feasibility) with the "Very Worthy" category at 87%. The response of students at SMA Wijaya Putra Surabaya is higher than the response of students in SMA Negeri 1 Cerme with a percentage of 88% and 87% respectively, but both show a good response from students. The high level thinking ability of Wijaya Putra Surabaya High School students is lower than the high-level thinking ability of students in SMA Negeri 1 Cerme. Each average value is 66.8 with 73.4. But of the two average values in the "Good" category.

Suggestions that can be given by researchers are that further research should be conducted to measure the effectiveness of using HOTS-based student worksheet in materials. In the development of HOTS-based student worksheet only at C4 (analyzing) and C5 (evaluating) cognitive levels, further research can be carried out to C6 (creating) cognitive levels. The teacher is expected to increase the development of HOTS-based student worksheet and apply it to learning so that students are accustomed to thinking at the HOTS level. In making HOTS based student worksheet, the command sentence in the question is not complicated so that students easily understand the purpose of the command. During learning, especially in carrying out HOTS-based student worksheet assignments the teacher must continue to accompany each step so that there is a common perception among all students.

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