# The Development of Student Worksheet Based on Contextual Approach to Improve Critical Thinking Skills in the X Grade of High School Economics Lessons

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## Abstract

The research aims to develop student worksheet based on a contextual approach to improve critical thinking skills in the economic subjects of the high school class, which uses to analyze and describe 1) the feasibility of resulting student worksheets, 2) student responses to participants' worksheets the students produced, and the effectiveness of using the student worksheet on improving critical thinking skills. This study uses the 4D development models of Thiagarajan, Semmel, and Sammel (1947) which includes defining, design, develop, and disseminate. The types of data in this study are qualitative and quantitative data obtained from the study and validation of experts as well as filling in the questionnaire of educators and students. The trial design used in this pre-experimental study with the form of one grub pretest-posttest results were analyzed using n-gain. The results of this study are 1) based on the assessment of the material produced by student training sheets, a percentage of 98%, 91% of linguists, and 85% of graphic experts. From the assessment of the three experts, the average percentage was 89.6% so it could be categorized as "very feasible", 2) the response from students showed that it was very feasible because of the percentage of assessment reached 83.9%, 3) limited test activities are effective in improving students' critical thinking skills, this is evident in limited n-gain trials showing an average of 0.5 with a percentage of effectiveness of 95% and when the n-gain trial field shows an average of 0.7 with a percentage of effectiveness of 97%.

**Keywords:** Student Worksheet, Contextual Approach, Critical Thinking

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## Introduction

The rapid development of science and technology demands every country to improve the quality of its human resources. For a human resource of high quality in the global era can be done through a process of education (Trianto, 2015). Educational development can be improved by prioritizing innovation in education. Educational Innovation can be done through curriculum changes. This is done to produce educational output that is qualified and competitive human resources in the global era.

At present the curriculum applied in Indonesia is the 2013 curriculum. According to T Developer (2014), one of the rationales for the development of the 2013 curriculum is the improvement of mindset. Learning activities are one of the core activities in the curriculum to achieve a predetermined graduation standard. In teaching and learning activities there are several supporting components, one of which is teaching the material. Teaching materials are a tool for students to learn something (Hamdani, 2011). Teaching materials that are most often used are printed teaching materials, one of which is the student worksheet.

Lamongan High School 2 is one of the high schools that apply the 2013 Curriculum in the learning process. Based on the results of observations and interviews with economic teachers, in the learning process, the teacher has applied the learning model and method. The learning model that is often used is the cooperative learning model, also, the teacher uses several media and teaching materials in the learning process. The teaching materials used are textbooks and modules. The most commonly used teaching material is a module. the module used in school is a module purchased from a publisher. The module contains a summary of the material and evaluation questions whose answers can be found in the summary of the previous material. So that in this case, the available modules are interactive in that they only aim to attract responses from students without exploring the knowledge of students more deeply. therefore, supporting materials are needed which are expected to stimulate students to express their thoughts, one of which is the students' worksheet. According to Prastowo (2015), the student worksheet has a simpler arrangement but has a more complex arrangement than the module.

The concept and implementation of the 2013 curriculum by the ministries of education and culture (2014) stated that the reason for curriculum development is to improve the ability to think clearly and critically. In this case, the teacher plays a very important role in helping students to develop students' critical thinking skills. Teachers must be able to stimulate students who are initially only as listeners when the teacher explains that now students are required to be able to think analytically and critically.

Based on the results of observations and interviews, the level of critical thinking of students is still not maximal, this can be seen through the way students answer questions when answering questions students tend to copy answers from books or just memorize without pouring their knowledge. In additio, 45% student of still have not achieved the minimum completeness criteria. This is caused by various factors including the students' lack of understanding of the material being studied.

One material that must be studied in economic subjects is the central bank, payment system, and payment instruments in the economy in Indonesia. in this material, several sub-chapters must be studied by students. based on observations of students assume that the material is material that is quite difficult because a lot of material must be learned. Also, this material is one of the material that is closely related to everyday life so that

students make direct observations of their daily lives. Through their daily experiences, students can build on the knowledge they have.

According to Nur ( 2013), the contextual approach is one of the approaches suggested to help students improve their activeness and understanding. The contextual approach is recommended in learning because of the contextual approach or contextual teaching and learning (CTL ) is a learning concept that helps teachers associate material taught with students' real-world situations and encourages students to make connections between their knowledge and application in their lives as family members and communities so that students can build their knowledge through observing everyday life (Trianto, 2008) . In learning with contextual approach, there are several characteristics of contextual learning include learning to apply the concept of Relating, the concept of direct experience, the concept of application, the concept of cooperation, the concept of self-regulation, and the concept of authentic assessment (Komalasari, 2010).

Based on the problem, the researcher wants to conduct a research entitled "Development of Student worksheets Based on Contextual Approach to Enhance Critical Thinking Skills in Class X High School Economics Subjects ".

In researching developing student worksheets several eligibility criteria must be met. According to the Standard Agency National Education (2014), there are several components of feasibility that must be met, namely:

**Table 1. Components of content eligibility**

| Component of Feasibility | Sub Component |
|---|---|
| Component of eligibility | The dimension of knowledge |
| | Skills Dimension |
| Component of presentation feasibility | Presentation technique |
| | Supporting material presentation |
| | Presentation of learning |
| | Complete presentation |
| Component of eligibility Linguistics | Conformity with the development of students. |
| | Legibility |
| | Motivating ability |
| | Ability |
| | Coherence |
| | Compliance with Indonesian writing rules |
| | Use of terms and symbols |
| Components of graphic feasibility | Size of student worksheet |
| | Cover design of the student worksheet |
| | Design the contents of the student worksheet |

Source: adapted from BSNP (2014)

Based on research conducted by Rizki, Mz, & Risnawati (2017) student worksheet with the resulting contextual approach has a validity level of 83.72%, the practicality of 89.94% and an effective test of 86.49% so that the development of these products are categorized as very feasible. In line with the results of the research conducted by Fitrayati, Prakoso, & Dewi (2016) with the student worksheet that was developed having a feasibility weighting of 86.40% so that it was categorized as very feasible. Likewise, development research carried out by Zulyadiani (2017) The student worksheet developed has a material expert assessment of 88.6% with a very feasible category, design expert's assessment of 76.2% with a feasible category and media expert's evaluation of 88.6% with a very feasible category so that it can be concluded

that the student worksheet is developed declared valid and practical .

Based on the explanation above, the objectives of this study are to : (1) to analyze and describe the feasibility of an worksheet learners based contextual approach produced, (2) analyze and describe the response of bubonic and students on an worksheet learners based contextual approach produced, (3) analyze and describe the effectiveness of the use of an worksheet students are based on a contextual approach to improving students' critical thinking skills.

## Methods

This research is a study of R & D developed with the 4-D model of development, which consists of 4 stages, namely define, design, develop, and disseminate. The following is the research procedure used in developing the student worksheet based on a contextual approach.

In this study conducted two trials, which limited testing and field trials. The trial design used in this contextual-based student worksheet development research is the Pre-Experimental Design in the form of One-Group Pretest-Posttest Design. The description of the One-Group Pretest-Posttest model can be formulated as follows:

### Picture 1. Trial design

**Information**

O 1     : The value of the pretest (before treatment)

X       : Treatments

O 2     : The value of posttest (after being given treatment

The subjects in this development study were twenty students in a limited trial and thirty-four students in a field trial was a class X social student at Lamongan 2 High School. This study uses qualitative data obtained from the study of experts, namely material experts, linguists, and graphics experts. Also, this study uses quantitative data obtained from the results of expert validation, responses of students and educators, and the results of the pretest-posttest. Qualitative data is used in descriptive qualitative analysis techniques, the results of the expert review in the form of expert suggestions and comments that are useful for improvement from the student worksheet developed so that it can be a viable product to be used as supporting teaching materials in the learning process. While quantitative data obtained from expert validation and obtained based on the assessment of experts on the student worksheet produced. This assessment uses a Likert scale with the criteria below.

**Table 2. Criteria for Evaluating Validation Sheets Based on a Likert Scale**

| Assessment | Score |
|---|---|
| Very Good | 5 |
| Good | 4 |
| Enough | 3 |
| Bad | 2 |
| Very bad | 1 |

Source: Riduwan (2016)

From the results of the calculation, the feasibility is categorized according to the following table:

**Table 3. Description of the Feasibility Score by Experts**

| Precentage | Criteria |
|---|---|
| 0%‐20% | Very inappropriate |
| 21%‐40% | Not feasible |
| 41%‐60% | Fair enough |
| 61%‐80% | Worthy |
| 81%‐100% | Very Worthy |

Source:processed by the author

Aside from expert validation sheets and educator responses, quantitative data was also obtained from the responses of the students. this research is based on the Guttman scale as in the table below.

**Table 4. Guttman's Scale Score**

| Score | Criteria |
|---|---|
| 1 | Yes |
| 0 | No |

Source : Riduwan (2016)

After the juice assessment, the students are recapitulated and the assessment is categorized as follows:

**Table 5. Interpretation Criteria Score of Students' Response**

| Precentage | Criteria |
|---|---|
| 0%‐20% | Very inappropriate |
| 21%‐40% | Not feasible |
| 41%‐60% | Fair enough |
| 61%‐80% | Worthy |
| 81%‐100% | Very Worthy |

Source: processed by the author

The effectiveness of student worksheets to improve critical thinking skills is measured using the N-gain test. Test N-gain useful to know the great improvement of the critical thinking skills of students before and after being treated. The treatment referred to in this study is the provision of student worksheets based on a contextual approach. The formula used is as follows Archambault (2008) :

$$Gain\ score = \frac{score\ posttes - score\ pretest}{maximal\ score - pretest\ score}$$

The ability to think critically rated to increase if the value of N-gain> 0, 3, with the criteria as unpacking be r participate:

**Table 6. N-gain criteria**

| Gain Score | Criteria |
|---|---|
| g> 0,7 | High |
| 0,7>g>0,3 | Is Being |
| g< 0,3 | Low |

Source :Archambault (2008)

Student Worksheets are declared effective if more than 85% of students experience an increase in critical thinking skills.

## Results and Discussion

The development of student worksheets based on this contextual approach was developed through four stages of development, namely :

First, the define phase at this stage consists of five main steps (1) front end analysis, in the form of (a ) analysis of the implementation of the curriculum applied in the school and determining the formulation of learning indicators in accordance with KI and KD ; (b) the analysis of students is done by conducting observations and interviews with educators to find out the characteristics of students and to find out the obstacles that occur in the learning process so that it becomes the background and basis of the development of students worksheets ; (c) task analysis is carried out by determining the tasks that are the contents of the participants' training sheet in accordance with the material selected; (d) concept analysis, in this analysis determined material that is suitable and appropriate to be included in the worksheet of students developed. The material listed on the student worksheet is simplified in the form of a concept map; (e) analysis of learning objectives is designed by the basic competencies and predetermined indicators.

Second, the design stage. I n this stage consists of three main steps, namely: (1) election format of student worksheet, the format of the student worksheet developed was guided by the assessment of textbooks from the national education institute (2014), which were compiled from the preliminary section, content section, and closing section; (2) compilation of contextual learning-based student worksheets, this product was developed in accordance with the 2013 curriculum economic syllabus in it here are phases of learning a contextual distance is arranged in interesting and easy to understand.

Third, develop. At this stage, a product has been produced in the form of a student worksheet based on a contextual approach. Furthermore, the product sheets that have been developed are reviewed by experts, the experts in question are 2 material experts who are one of the lecturers in the department of economic education and one of the economics subject teachers in Lamongan 2 High School, one language expert who is a Faculty lecturer Language and Art, and 1 graphic expert who is a lecturer at the Faculty of Education . The study of these experts aims to provide comments and suggestions so that the products produced can be said to be feasible. After reviewing the developed program revised by the author and then validated by experts.

At the validation stage, the experts provide an assessment of the revised product. The assessment results from material experts in terms of content and presentation are 98 % so the resulting worksheet is categorized as very feasible. While the assessment of linguists by 91% means that the sheet of student activities produced is categorized as very feasible, and the assessment of graphic experts is 85 % with a very feasible category. from the assessment of the expert's expectations, the average percentage was 89.6% so that the resulting student worksheet was categorized as very feasible.

Fourth, the disseminate stage. At this stage, the product is distributed. This deployment stage is done in Wringinanom 1 High School. Thing This aims to get the response of educators and students to the resulting worksheet. In this stage, there is a spread of twenty students and 1 educator in economic subjects. It aims to get the response of educators and students to the resulting worksheet. Percentage of assessment from educators in terms of presentation, content, language, and graphics is 81 % with very feasible categories and recapitulation of the percentage of response rating students is 93.5% with a very decent category.

In evaluating student responses, it was shown that the development of student training activities based on a contextual approach showed an average assessment of all components of 83.9% with a very feasible category. in terms of the feasibility of the material content of 100% with a very feasible category, the feasibility of presentation is 72.5% with a feasible category, language feasibility is 90% with a very feasible category, and feasibility of graphics is 73.3% with a feasible category.

The results of the analysis of the use of student worksheets with a contextual approach are considered effective in limited trials and field trials show that the resulting student worksheet is effective in improving students' critical thinking skills, this is evidenced that in limited n-gain trials showed an average of 0.5 with a percentage of effectiveness of 95% and at when the n-gain field trial shows an average of 0.7 with a percentage of effectiveness of 97%.

## Conclusion

Based on the results of data analysis and discussion that has been described in the previous chapter, conclusions can be drawn as follows:

1. The contextual approach based Student Worksheet is stated to be very feasible both by material, language, and graphic experts so that it is worthy of being used as supporting teaching material in even class X economics subjects.

2. The Student Worksheet based on the contextual approach developed has received a very good response from students so that it can be used as supporting teaching material on even-grade X economics subjects.

3. The resulting context-based Student Worksheet is declared effective in improving students' critical thinking skills

## Suggestion

Based on the results of the research and the conclusions that have been described, the following suggestions can be given:

1. The scope of the material on the worksheet of students who developed limited central bank material, systems, and payment instruments, for the extent of the scope of material in the student worksheet can be developed for other material.

2. The developed student worksheet is designed to be more attractive so that students are more motivated in the learning process.

3. To measure the effectiveness of using student worksheets a wider scale field trial can be carried out because in this study field trials were only conducted on 34 students.

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