

**PENGEMBANGAN MEDIA PEMBELAJARAN HYPERMEDIA DALAM UPAYA
MENINGKATKAN KETERAMPILAN BERPIKIR TINGKAT TINGGI SISWA
MATA PADA MATA PELAJARAN EKONOMI SMA KELAS X**

Robi Maulana¹, Syafaatul Hidayati²

Universitas Pamulang

robbywhatever@gmail.com¹, dosen00861@unpam.ac.id²

Abstrak

Penelitian ini bertujuan untuk mengembangkan Media Pembelajaran Hypermedia dalam Upaya Meningkatkan Kemampuan Berpikir Tingkat Tinggi siswa pada mata pelajaran ekonomi kelas X SMA. Dalam penelitian ini menggunakan tahapan studi pengembangan model. Tahapan tahapan model penelitian studi pengembangan menurut akker antara lain penelitian pendahuluan, tahap prototyping, evaluasi sumatif, refleksi sistematis dan dokumentasi. Media pembelajaran hypermedia yang dikembangkan dinyatakan layak. Kelayakan ini dinilai oleh dua orang ahli yang terdiri dari ahli media dan ahli materi. Ahli media menyatakan bahwa media pembelajaran hypermedia sangat baik dan layak digunakan (91,1%). Ahli materi menyatakan bahwa media pembelajaran hypermedia baik dan layak digunakan (92,2%). Media pembelajaran hypermedia yang dikembangkan sangat efektif dalam meningkatkan kemampuan berpikir tingkat tinggi. Hasil posttest siswa juga menyatakan bahwa media pembelajaran hypermedia sangat efektif (75%) dalam meningkatkan kemampuan berpikir tingkat tinggi siswa. Skor N-gain yang diperoleh mahasiswa dalam penelitian ini adalah 0,5 (kategori sedang). Media pembelajaran hypermedia dinyatakan berdasarkan hasil wawancara guru dapat meningkatkan kemampuan berpikir tingkat tinggi. Sementara itu, siswa menyatakan media pembelajaran hypermedia praktis digunakan (82%). Media pembelajaran membutuhkan smartphone versi android 6.0 yang mana tidak semua siswa memiliki versi ini, dan jika menggunakan versi ios atau website membutuhkan koneksi yang stabil untuk menjalankan media pembelajaran hypermedia online.

Kata kunci: Media Pembelajaran, hypermedia, keterampilan berpikir tingkat tinggi

**DEVELOPMENT OF HYPERMEDIA LEARNING MEDIA IN AN EFFORT TO
IMPROVE HIGH ER ORDER THINKING SKILLSS STUDENTS IN HIGH SCHOOL
ECONOMICS CLASS X SUBJECTS**

Abstract

This study aims to develop Hypermedia Learning Media in an Effort to Improve students' higher order thinking skills in class X high school economics subjects. In this research, it uses the step of model development studies. The stage stage of the development studies research model according to akker such as preliminary research, prototyping stage, summative evaluation, systematic reflection and documentation. The hypermedia learning media developed was declared feasible This feasibility was assessed by two experts consisting of media experts and material experts. Media experts stated that hypermedia learning media is excellent and feasible to use (91.1%). Material experts stated that hypermedia learning media is good and feasible to use (92.2%). The hypermedia learning media developed is very effective in improving higher-order thinking skills. The student posttest results also stated that hypermedia

learning media is very effective (75%) in improving students' high-level thinking skills. The N-gain score obtained by students in this study was 0.5 (medium category). Hypermedia learning media is stated based on the results of teacher interviews to improve higher-order thinking skills. Meanwhile, students stated that hypermedia learning media is practically used (82%). Learning media requires an android 6.0 version smartphone which not all students have this version, and if using the ios version or website, it requires a stable connection to run hypermedia learning media online.

Keywords: Learning Media, hypermedia, higher order thinking skills

INTRODUCTION

Education is one of the many ways that our society achieves the goal of a better life. Education is needed in shaping the character, mentality and potential of students. With education, students are expected to become individuals with noble and competent character. Permendikbud No. 21 of 2016 concerning Content Standards for Primary and Secondary Education states that the future competency needs of students are those who can have high-level thinking skills or Higher Order Thinking Skills (HOTS). However, students are still not encouraged to be able to master high order thinking skills (Handayani, 2013: 955).

Students find it difficult to master high order thinking skills, this is based on research trends in international mathematics and science study (TIMSS) and The Programme for International Student Assessment (PISA). TIMSS determines that students' correct answers to comprehension questions (C2) are always superior to those of application (C3) and reasoning (C4).

Indications of the low number of students in understanding HOTS abilities can be seen in the results of the 2018 OECD Program for International Student Assessment (PISA) research which shows that students in Indonesia are only ranked 70th out of 78 countries. The literacy rankings titled World's Most Literate Nations announced in March 2016, a product of Central Connecticut State University (CCSU) released the literacy rankings of the world's countries in March 2016. Reading literacy in the general public is reading. The definition of reading literacy has undergone changes with a variety of

very broad meanings. Reading literacy is not only limited to reading, by gaining understanding / meaning from words or sentences arranged in the text or spoken.

This ranking of literacy behavior is made based on five indicators of state literacy health, namely libraries, newspapers, education, and the availability of computers. Indonesia ranked 60th out of 61 countries surveyed. Such things have indicated the difficulty of students in mastering high order thinking skills considering that PISA questions not only require the ability to apply a concept, but also master the results of analysis, evaluation, and creativity in learning (Kurniati, 2016: 143).

The OECD Program for International Student Assessment (PISA) presented the results that one of the causes of the low achievement of high order thinking skills of students at this international level is the low level of reading literacy in Indonesia which is due to several factors.

One of the many factors is the unwise use of technology. Many students in Indonesia are complacent about the sophistication of technology today when in fact activities to increase literacy can also be carried out through gadgets and with the existence of e-book technology. We can know that people tend to prefer to enjoy other things such as games, social media, music, or photography rather than increasing reading literacy. Social media activities, both viewing videos or chatting from other platforms, became excellent and reading activities began to be gradually abandoned.

Based on the findings of the Central Statistics Agency (BPS) and The

United Nation of Education Social and Cultural (UNESCO) released in 2016, 300 minutes per day is the time used to watch television. Things like this certainly hinder the motivation of students in gaining knowledge, this makes it difficult for students to get academic literacy skills.

Students should need to improve high order thinking skills. Otherwise, there will be a negative impact on students who will later have a short-term memory during teaching and learning activities, meaning that students will easily memorize but also quickly forget the lesson (Julistiawati, 2013). OECD, Skills Matter: Further Results From The Survey of Adult Skills presenting something like this will have an impact on the quality of human resources in Indonesia. Currently, Indonesia is slumped at the bottom of the rankings in almost all types of competencies that are needed by adults undergoing competition in the world of work. Based on the observations of researchers at SMA BP FAI UMJ, information was obtained that there are still many students experiencing difficulties in solving problems related to C4 - C6 in schools. In the results of field studies, what has happened in teaching and learning activities often occurs the learning process runs and takes place very ineffectively.

The impact is that time, energy and costs are simply wasted while the purpose of learning is not achieved and there is even noises in communication between teachers and students. Sering occurs to a teacher who is not creative when implementing teaching methods. The teacher is already quite satisfied with the conventional model as a result of not motivating students in carrying out the learning process. They rely

on lecture methods that spur students to bore so that less effective and unpleasant learning occurs. This is still often found in the process of teaching and learning activities.

This results in students experiencing boredom in participating in learning activities in the classroom where learning activities that should run well actually make students feel bored and bored, in another sense students want something different from the teaching and learning process in order to create a comfortable atmosphere in the learning process.

One way to create a comfortable atmosphere is to provide learning media that encourages students' motivation to carry out teaching and learning activities. In addition to encouraging student motivation, the media created should keep up with the changing times in today's globalization and be able to encourage students to think critically and cultivate students' mindsets to form students' high order thinking skills.

One of the solutions to unravel the difficulty of students in improving high order thinking skills is to use a hypermedia learning media technology. Susilawati (2016) hypertext and hypermedia is one of the computer-based multimedia concepts. According to Sesemane, technology in hypermedia learning media indicates students to explore various information (Mardiah, 2015: 21). According to (Lukitaningsih, 2010: 44) media hypermedia allows exciting learning, learners get an opportunity to engage their desires further. This media is also effective in increasing high order thinking skills.

This is evidenced in the journal of education and practic research Bunga Dara Amin (2016: 27) The Development of Physics Learning Instrument Based on Hypermedia and Its Influence on the Student Problem Solving Skill, which shows that hypermedia-based learning is able to increase affective competencies that include feelings, interests, and attitudes towards the learning process.

Based on the evaluation of students on learning using hypermedia, it was found that students' perceptions above 90% approved of the use of hypermedia, None of them disagreed with the implementation of hypermedia in learning. Students are interested in hypermedia display, easy to run, the content is easy to understand and enjoy learning with hypermedia. Students who use learning media technology have received an increase in creative thinking and are able to improve their critical thinking skills.

Learning media that can improve the high order thinking skills of students need to be applied to the material of economic problems in economics subjects. Lack of learning media to support reading literacy so that students cannot solve problems that demand high order thinking skills .

The time in school is also not enough for learners to be able to understand about the core of the economic/scarcity problem. Hypermedia offers an important advantage for education because this structure facilitates a constructivist approach. Hypermedia allows users to build their own knowledge in their own way (Warno, 2012:35).

Students have difficulty in mastering some of the material in developing countries for example scarcity is a problem

that forces Mhluk of life to make choices in his life both individually and collectively caused by the limited number of need-filling tools available in nature.

At the core of the material is amaterial that can stimulate the high order thinking skills of students. The revised 2013 curriculum has stated the basic competence that students must achieve on the subject matter of economic problems is to analyze an economic problem in the economic system.

In the ability to analyze including the category of high order thinking skills in Bloom Taxonomy, for this reason, it is necessary to update the learning media in these subjects.

The renewal of learning media that can high order thinking skills of students is neededthrough the use of high order thinking skills will improve the competence of students in the field of education and create students who have competitiveness in industrial competition work.

The results of the development researchthat has been carried out have more value than previous studies. The renewal has a character: a scientific approach model, providing high order thinking skills, and making teaching and learning activities better. Through learning by applying a scientific approach, it can train high order thinking skills (Wahyuni 2015: 1).

Meaningful learning activities , students can remember longer memory of the material carried out by learning activities in the classroom. These media characteristics can help students in obtaining high order thinking skills. Researchers see that it is necessary to

hold a renewal of learning media to be able to improve high order thinking skills. (Fitriani, 2013). This research is in line with the research conducted by Hari Yuda (2014) with the result that hypermedia-based learning exists in a valid and reliable category that motivates students to be active in the learning process. An attractive display that invites students to do a virtual simulation.

Based on the theory and observations above, researchers are very interested in doing something in-depth to start developing hpermedia learning in an effort to improve students' high er order thinking skills in high school economics class X.

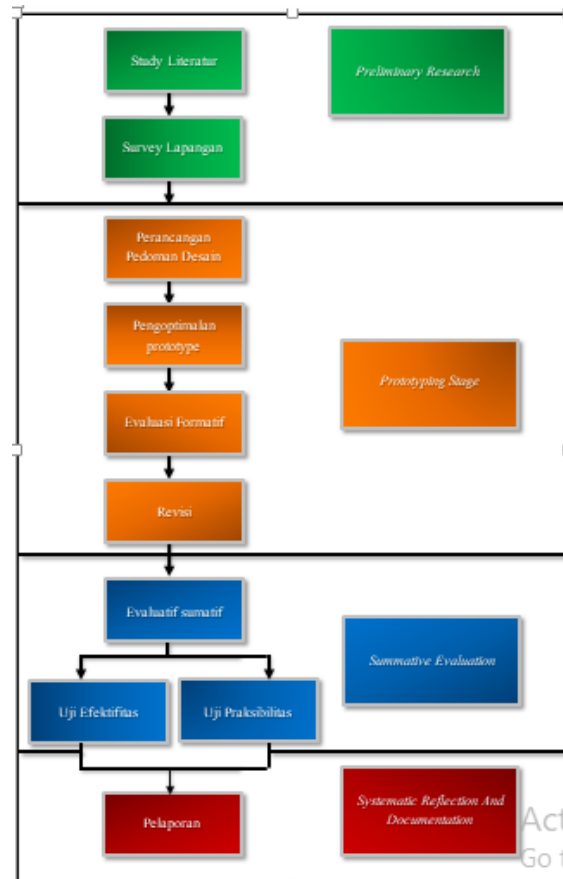
METHODOLOGY

Research and development conducted is a research to produce an effective product and will be used for educational institutions, not just testing a theory that has existed. There are two types of models from research and development research, namely validation studies, and development studies. Validation studies is a development model to dismiss the theory of learning theory, while development studies is a research model that aims to find a solution to a problem that exists in educational institutions by examining relevant theories of knowledge (Akker, 2006: 152).

In this research, researchers use the step of model development studies, which aims to create a product or solusi that can solve problems in schools by prioritizing theoretical theories that have been developed previously. The stage stage of the development studies research model according to akker such as preliminary research, prototyping stage, summative evaluation, systematic reflection and

documentation.

The steps in the research on the development of hypermedia learning media can be conceptualized as follows.



Source: Akker (Modified Researcher, 2019)

The research instruments used in this study are test and non-test instruments. This instrument aims to see the criteria for the validity, effectiveness, and practicality of the hypermedia learning media developed.

The data that has been obtained through trials can be divided into 2, namely qualitative data and quantitative data. Qualitative data contains criticisms and suggestions from material experts, media

experts, and student responses combined for product improvement development. Quantitative data can be obtained from questionnaires which are then converted to qualitative data by using a likert scale to see the quality of the media .

This subject matter analysis can be done by analyzing groups to determine the objectives of economic learning based on competency standards and basic competencies and compiling the material to be developed. These results will be used as a reference to carry out the development of hypermedia learning media.

RESULTS OF RESEARCH

There are several stages of formative evaluation such as the expert assessment stage, student response, and field tests. A formative evaluation is obtained as follows.

First, the results of the assessment of media experts and material experts (expert review). In this learning media is assessed by two experts consisting of one media expert and one material expert, this stage has the aim of obtaining media feasibility as well as input and suggestions to improve this media product In validating media experts, it is assessed from several aspects of learning. The assessment includes aspects of the feasibility of the media as a whole, expert assessment analysis in each aspect and aspects of each indicator.

Media Expert Validation Results. Media products that have been created will be validated by media experts and material experts. The assessment stage of the experts is media expert lecturers and learning material experts of the Economic Education Study Program, Pamulang University. In this assessment the aspects. Learning media products that have been given to

experts are in the form of html5-based hypermedia development products or website-based and android apk. Media products that have gone through media experts in the form of digital hypermedia-based learning media, on material on economic problems in the economic system of class X economic subjects, the following are the results of qualitative data on products that have been developed. Furthermore, qualitative data that has been collected based on comments and suggestions on the development of hypermedia media products to be suitable for use in the learning that has been given by material experts is that it is necessary to adjust the illustration images or photos in each material and the addition of sound effects to each button feature.

Second, the results of material expert validation. Media products that have gone through media experts in the form of digital hypermedia-based learning media, on material on economic problems in the economic system of class X ECONOMICS subjects, the following are the results of qualitative data on products that have been developed. Furthermore, qualitative data has been collected based on comments and suggestions on the development of hypermedia media products to make them suitable for use in the learning that has been given by material experts is for the material to be emphasized (color and writing) the material even though it is simple to cover the whole.

Based on the results of the assessment to media experts on hypermedia learning media products that have been described, it can be calculated

with the percentage of product achievement levels as follows.

$$\text{Percentage} = \frac{\Sigma(\text{total score})}{\Sigma(n \times \text{highest weight})} \times 100\%$$

$$\text{Percentage} = \frac{101}{110} \times 100\% = 91,81\%$$

From the calculations above, we can see that this learning media is declared feasible with a value of 101 out of 110 (91.81%). Media experts here assess hypermedia learning media from visual aspects, communication aspects and media soft performance aspects.

Based on the results of the assessment to material experts on the hypermedia learning media products that have been described, it can be calculated with the percentage of product achievement levels as follows.

$$\text{Percentage} = \frac{\Sigma(\text{total score})}{\Sigma(n \times \text{highest weight})} \times 100\%$$

$$\text{Percentage} = \frac{83}{90} \times 100\% = 92,22\%$$

From the calculations above, we can see that this learning media is declared feasible with a value of 83 out of 90 (92.22%). Material experts here assess hypermedia learning media from six aspects. The results of the material expert assessment analysis showed that 38% of the assessment indicators were categorized as good while 72% of the assessment indicators were categorized as excellent. Teaching material experts give advice on revising some parts of the hypermedia learning medium. The advice given by the material expert is that hypermedia learning media prioritizes the material given

emphasis on color and writing and material even though it is simple to cover the whole.

Based on the results of the assessment to media experts on hypermedia learning media products that have been described, it can be calculated with the percentage of product achievement levels as follows.

$$\text{Percentage} = \frac{\Sigma(\text{total score})}{\Sigma(n \times \text{highest weight})} \times 100\%$$

$$\text{Percentage} = \frac{1334}{1600} \times 100\% = 83,37\%$$

The results of the summation above prove that the percentage of achievement rate is 83.37% with a very interesting level of criteria and this media no longer needs to be revised. Based on data analysis, it can be seen that the hypermedia learning media that has been developed is very good to use as a learning medium. This can be seen from the percentage that has been obtained from the results of field tests. The value obtained is 1334 with the highest score of 1600, then a percentage of 83% is obtained, then the hypermedia learning media that has been developed no longer needs revision. All the criteria items that are rated as very attractive.

Third, the results of summative evaluation. Hypermedia products are revised gradually on formative evaluations. The results of the revision were then tested for effectiveness and practicality in summative evaluations. The summative evaluation involved 20 students and 1 teacher from the school studied. The results of the research obtained include the effectiveness and practicality of

hypermedia based on student and teacher assessment questionnaires.

The effectiveness of hypermedia at this stage of summative evaluation is based on student posttest results and teacher assessments. Student posttest results stated that 15 out of 20 students scored ≥ 75 which can mean that 75% of students graduated and this hypermedia is effectively used.

Effectiveness

$$= \frac{\text{Number of completed students}}{\text{Number of students}} \times 100\%$$

$$\text{Effectiveness} = \frac{15}{20} \times 100\%$$

$$\text{Effectiveness} = 75\% \text{ (Effective)}$$

The development of hypermedia learning media in an effort to improve the high order thinking skills of students of economics class X social studies subjects of BP FAI UMJ High School is effective in influencing the results of students' high order thinking skills. This can be seen based on the value of the effectiveness test percentage, which is 75%. Then, the N-Gain test on the summative evaluation was 0.5 with a moderate category. The determination of the effectiveness of hypermedia is not only from students, but also from teacher interviews. This is because the teacher states that the media is effective to be used as a learning medium with a good level of effectiveness.

DISCUSSION

Hypermedia learning media is said to have a positive impact on students. This is reinforced based on the results of interviews with several students and teachers, where student and teacher responses related to hypermedia learning media are relatively good. In general, the results of interviews with students say that the text and images on

the hypermedia media display are very clear, very interesting, the suitability of the material is quite good, where the sentences on the material contained in the hypermedia media have an unbiased sentence clarity display, so that this hypermedia learning media provides a positive impact response for them. They have an easier time understanding the material being explained because the material contains videos of real examples that they can see and hear clearly.

In other words, based on the above. Researchers can conclude that the use of hypermedia media provides a positive response for students. This is also directly proportional to the assessment of hypermedia learning media in the process of learning activities, especially on the competence of economic problems in the economic system which is certainly relatively good if practiced in class X economics subjects.

Mutmainnah, A.N., Yulidah, R., Yuniarti, S., (2017) hypermedia is a combination of various media in one interconnected system, making it easier for students to access the material / content needed. The use of hypermedia can be done anywhere and anytime as long as it is still connected to the internet network. This will certainly have a very positive impact on students in interacting in class. Students will be more motivated in their learning because the media used is in accordance with student needs.

CONCLUSIONS

The development of hypermedia learning media on KD economic problems in the economic system provides output in the form of media that can be run on internet-based hardware, both computers

and smartphones. This research using the van den akker method which focuses on Validation studies is a development research model that aims to refute learning theories, while development studies is a development research model that aims to solve educational problems using relevant theories of knowledge. Validation studies is a development research model that aims to refute learning theories, while development studies is a development research model that aims to solve educational problems using relevant theories of knowledge. The hypermedia learning media developed was declared feasible This feasibility was assessed by two experts consisting of media experts and material experts. Media experts stated that hypermedia learning media is excellent and feasible to use (91.1%). Material experts stated that hypermedia learning media is good and feasible to use (92.2%). The hypermedia learning media developed is very effective in improving higher-order thinking skills. The student posttest results also stated that hypermedia learning media is very effective (75%) in improving students' high-level thinking skills. The N-gain score obtained by students in this study was 0.5 (medium category). Hypermedia learning media is stated based on the results of teacher interviews to improve higher-order thinking skills. Meanwhile, students stated that hypermedia learning media is practically used (82%).

Suggestions

Hypermedia learning media is said to be effective in learning, but this study cannot explain the influence of hypermedia media on student learning outcomes. It is necessary to conduct further and long-term research to measure the influence of hypermedia developed on a larger scale. Hypermedia

learning media can be further developed in other general subjects. This is based on the results of input from teachers to create hypermedia learning media in social studies, mathematics, science and others. Learning media requires an android 6.0 version smartphone which not all students have this version, and if using the ios version or website, it requires a stable connection to run hypermedia learning media online.

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