The Development Of A Webquest Assisted Problem Based Learning Model In An Effort To Improve The Learning Outcomes Of The Xl Grade Economics In Sma Negeri 1 Kota Kupang

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Abstract

The aim of this research is to produce a problem based learning model, using webquest, to be implemented in SMA Negeri 1 Kota Kupang, in an effort to increase the result of students in the economics subject. The research used a Research and Development Approach (R&D). The procedure of the research was applied, referring to design and development research, according to Borg and Gall, that contained 6 steps of the development; (1) research and information collecting, (2) planning, (3) develop a preliminary form of the product, (4) preliminary field testing, (5) main product revision, (6) main field testing. The internal validation of the learning model, using the webquest, involved the experts of learning, the experts of learning media, the experts of material and a practitioner, such as the economics teacher in the school. The external validation was done by trying out the learning model, using the webquest, involving the students of XI IPS class. The subject of this research was the all of the eleventh grade students, in social sciences at SMAN 1, in the academic year of 2017/2018. The total of the students was 80. In this research, the sample technique was a saturated sampling technique; all members of the population became the samples. The analysis techniques used were descriptive analysis and statistic inferential analysis. The result of the research showed that: 1. The problem based

learning model, using webquest, was held to be valid, based on the validity test by the experts, 2. The problem based learning model, using webquest, was proved to be effective, when implemented in learning activities, in increasing the outcome of economic study for students.

Keywords: *Learning Model, Problem Based Learning, Webquest, The Result Study Of The Students*

Introduction

One of problems in education, encountered by Indonesia, is the low quality of education at every level of education and unit; particularly primary and secondary educations. Many attempts have been made to improve the quality of national education; e.g. national and local curriculum development, teacher competency improvement through training, book and teaching media procurement, education infrastructure procurement and improvement, and school management quality improvement. Nevertheless, various indicators of education quality have not shown significant improvement. Compared with South East Asian countries (ASEAN members), the quality of Indonesian education still falls in the low category (Masril. 2014). Some training has been held frequently to improve teacher competency in using innovative learning models. However, in reality, only a few teachers have applied such learning model in the teaching-learning process. Teachers still tend to use the teacher-oriented conventional learning model, so that teachers are more active with their lecturing method while students become more passive. The function of an economics course, in Secondary School, is to develop the students' ability in conducting economic activity. This is done by identifying various realities and events occurring within society, and understanding concepts and theory, and practicing to solve various economic problems occurring within the modern community. Considering the explanation above, the learning model that is applicable to an economics course is Problem Based Learning. Recently, technology has developed rapidly and has become more useful in all areas; e.g. internet

media can facilitate anyone to acquire information independently. To the education sector, such technology development is very useful to support the teaching-learning process. Such condition requires an educator to master technology in order to create a better and more creative. The internet can be used as to deliver learning media as well, media such as *webquest*. Through *webquest*, students can develop a more in-depth understanding of the problems through acquiring information collected from the web. SMA Negeri 1 of Kupang City is one of the Senior High Schools, existing in Kupang City, to implement the 2013 curriculum. The Problem based learning model is one of the learning models recommended in the 2013 curriculum. Considering the results of observation, it can be found that the internet network facility has been provided in the school and is accessible to both teachers and students ,but has not been utilized optimally yet for learning activities, by the 11th Social Science grade in the subject of economics. Further, every class in the school has been equipped with an LCD facility. The results of the interviews, with the Social Science students, shows that the learning media mostly consists of work sheets and power point slides. The learning media has not been able to increase the students' problem solving ability or to empower the students to think critically and creatively. Based on the observations, mid-semester exams show that 25 (31.25%) students obtained a score that was higher than the Minimum Mastery Criteria (MMC) of ≥ 75 and ≤ 55 (68.75%) of all students (80) obtained a score below the MMC. This indicates that the learning process in the class has not been optimal.

A Webquest-assisted, Problem based learning model can be one of the learning models applicable to economics learning at a Senior High School level. This learning model can run if the school provides supporting infrastructures such as internet networking facilities, accessible to both teachers and students, and an LCD in every classroom. Most importantly, teachers should have already mastered computer technology. Learning processes should run effectively and

efficiently in order to achieve the objective of learning; therefore a learning model should be developed for learning economics. This research and development will result in a learning model that is expected to improve the students' activeness, to improve high-order think ability, and to improve the students' ability to using technology.

Problem Statement

Considering the background above, the problem of this research can be formulated as follows:

a. What is the valid form of the webquest-assisted, problem based learning model prototype; used to improve the Economics learning outcomes of the 11th grade Social Science students, at SMA Negeri 1 in Kupang City?

b. How effective is the webquest-assisted, problem based learning model in the attempt of improving the economics learning outcomes of the 11th grade Social Science students?

Objective

The objective of the research refers to the background and the problem statement. This research and development aims:

1. To develop a valid webquest-assisted, problem based learning model, in the attempt of improving the economics learning outcomes of the 11th grade Social Science students of SMA Negeri 1 Kupang.

2. To find out the effectiveness of a webquest-assisted problem based learning model in the attempt of improving the economics learning outcomes.

Literature Review

National Education System

The National education system comes under the Minister of Education and Culture and other Ministers' responsibility, e.g. religion education under the Minister of Religion, Akabri under Minister of Defense and Security, and other departments contributing to holding education called education and training.

Considering the Republic of Indonesia's Law Number 20 of 2003, about the National Education System, the national education system consists of components of education integrated to achieve the objective of national education. Meanwhile, the function and objective of the Republic of Indonesia's national education, according to (Faturrahman, Ahmadi, & HA, 2012: 116), is to develop competency and to create character and civilization of the nation with dignity in the attempt of intellectualizing the nation's life.

Learning Strategy

According to (Gulo, 2008: 2), the term 'strategy', when applied to the realm of education, is an art and science to deliver teaching in such a way that the specified objective can be achieved effectively and efficiently. Learning strategy is used to achieve the specified objective of learning effectively and efficiently. (Asep & Abdul Haris, 2012: 24) explain that learning strategy is an approach in managing activity, by means of integrating the activity sequence, organizing the learning materials and the learner, tools and materials, and time used in the specified learning process, effectively and efficiently. The learning strategy, pre-planned by the teacher, is expected to make the teaching-learning process more effective, and to achieve all objectives of learning. (Majid, 2013: 8) explains that the strategy is arranged to achieve a certain objective, meaning that

all decisions to develop learning procedures, to utilize various learning facilities and sources, are directed to the attempt of achieving the objective.

Learning Model

Learning model is the practical foundation of learning, deriving from educational psychological theory and learning theory design, based on an analysis of the curriculum implementation and its implication at the operational level in the class. The Learning model can be defined as a pattern used to develop a curriculum, to organize material, and to give instructions to teachers in the class (Suprijono, 2012: 45).

A learning model can be classified based on its learning objective, syntax (sequence pattern) and learning environment characteristics. Syntax (sequence pattern) of a learning model is the pattern representing all existing procedures, generally followed with a series of learning activities. The syntax of certain learning models shows clearly the activities to be done by teachers and students (Ahmadi, Khoiru, & Amri, 2012: 9). Some learning models are explained below.

Direct Learning Model

A direct learning model is where a teacher participates actively in delivering the learning content, to the students, and teaches it directly to the entire class. The theories supporting direct learning, (Suprijono, 2012: 47), are behaviourism and social learning theories. Considering the two theories, direct learning emphasizes the learning as a stimulus-response process that is mechanical in nature; therefore social learning theory accentuates the change of behaviour, that is organic nature, through imitation.

Cooperative Learning Model

(Slavin, 2009: 4) stated that cooperative learning refers to a variety of teaching methods in which students work in small groups to help each other learn. In cooperative class, the students are expected to help, to discuss, and to argument with each other, to sharpen the knowledge they possess and to close the gap in their own understanding.

Problem-based learning model

(Suprijono, 2012: 68) suggests that problem-based learning is developed based on concepts proposed by Jerume Bruner. The concept is discovery learning. Discovery learning involves information, transformation, and evaluation processes. Meanwhile, according to Sudarman (2007), Problem Based Learning is a learning approach using real world problem as a context for the students to learn; thinking critically to solve problems, and to acquire essential knowledge and the concepts of the lecture or learning materials.

Webquest

(Sujatna, 2012) explains that webquest is an activity based on information interacting with students, derived from the internet as a source, equipped with videoconference. The internet has a variety of reading sources allowing students to find interesting, complete, and authentic reading sources easily and joyfully. (Rachmawati & Madya, 2014), One of internet media used is webquest.

Learning Evaluation

Evaluation is related to the assessment and the measurement of how successful an activity or a program is. (Widoyoko, 2010: 10) states that learning program evaluation is a systematic and sustainable process to collect, to describe, to interpret, and to present information on the implementation of learning program, designed and developed by a teacher to be used as the foundation to make decisions, to develop policy, and to arrange the next learning program.

Method

Setting

The location of research is the source location used to obtain necessary data. This research was conducted in SMA Negeri 1 of Kupang City located in Jl. Cak Doko No 59 Kel.Oetete, Kec. Oebobo. The research was conducted from January 2017 to April 2018.

Type of Research

The type of research used was "Research and Development". Research and development, according to (Sugiyono (2011: 407), is a research method used to produce certain products and to test the effectiveness of said products.

Target

The target of research was the 11th grade Social Science students of SMA N 1 Kupang. Product trial experiments and control classes were used to see the effectiveness of the learning model.

Research Procedure

The research procedure is the steps taken to conduct the research. The methods employed in this research are based on research and development procedure (Borg & Gall, 1983). Not all steps in this procedure were undertaken because the steps were adjusted in line with the research and development's needs of this study. The eight steps conducted in this research are: (1) Research and Information Collection, (2) Planning, (3) Development of the preliminary form of the product, (4) Preliminary field testing, (5) Main Product Revision, (6) Main field testing.

Population, Sample, and Data

Population is the object or subjects in an area, fulfilling certain conditions related to the problems of the research (Riduwan, 2014: 6). The population of research was all of the 11th grade Social Science students, of SMA Negeri 1 of Kupang City, in the school year of 2017/2018; consisting of 80 students in three classes. The sampling technique used was saturated (population) sampling. This was used as all members of the population are used in the sample. Considering the use of the population sampling technique, 26 students were used in Preliminary Field Testing, and 54 students were used in Main Field Testing (the test on the effectiveness of webquest-assisted problem based learning model). 27 students were used as the experiment class, using the webquest problem based learning model, and 27 students were used as the control class, using a problem based learning model.

Technique of Collecting Data

Techniques of collecting data used in this research were: 1) observation, to find out the need and the condition of SMA Negeri 1 Kupang, 2) interview to find out the problems and the constraints with economics learning implementation process; 3) questionnaire, to find out the students' response to webquest; and, 4) test to measure the learning outcomes. The instrument

of research consisted of an expert validation sheet, questionnaire, demonstration test, and observation sheet.

Technique of Analyzing Data

The Techniques of analyzing data, used in this research, consisted of 1) statistic descriptive analysis; and 2) statistic inferential analysis. Descriptive data analysis elaborated the result of research based on data obtained to find out the validity of the webquest-assisted problem based learning model. The criteria of assessment on the developed model was determined based on the Likert scale. Statistic inferential analysis was used to find out the effectiveness of webquest-assisted problem based learning, in the attempt of improving the economics learning outcome of students, using T-test.

Result and Discussion

Webquest-assisted problem based learning model is developed corresponding to (Borg & Gall, 1983) and modified into six stages. The model developed aims to improve the students' critical thinking and active problem solving skills, thereby impacting on the improved learning outcome. The webquest-assisted problem based learning model consists of seven phases in its learning syntax, as explained below:

a. Problem orientation

b. Presenting event or phenomenon through *webquest* to facilitate the identification of the problem.

c. Organizing the students to study through *webquest*.

d. Helping independent and group investigation through *webquest*.

e. Guiding the students to observe and to collect data through *webquest*.

f. Developing and presenting the result

g. Analyzing and evaluating the problem solving process.

Webquest is designed in such a way to possess an attractive appearance, and consists of some components:

a. Welcome

    This component contains topics or materials to be learnt.

b. Introduction

c. This section contains attractive explanations about background and elaborates on authentic problems.

d. Task

    It contains tasks to be assigned to the students.

e. Process

    It contains the explanation about the procedure the students should follow to complete their task.

f. Source

    This component contains source list usable for students to search for necessary information.

g. Evaluation

    This section explains the assessment criteria used to assess the students' task.

h. Conclusion

    It contains a conclusion on what the students have obtained during the learning process.

A *Webquest*-assisted problem based learning model can be used when the school has the following characteristics.

1) An internet network has been provided in the school and is accessible to both teachers and students.

2) Some facilities, such as LCD are provided in every class.

3) The school has implemented the 2013 curriculum.

4) The Teacher is been able to operate computer technology.

The validity of Webquest-Assisted Problem Based Learning Model

The results obtained from the learning expert validation, on the learning model developed, shows that the aspects based on standard process obtained a score of 93.3%; belonging to the 'very good' category. This indicates that the syntax and procedure of the webquest-assisted problem based learning models has been consistent with the standard process for primary and secondary education, referring to the Graduate Competency Standard and Content Standard. Social system aspects obtained a score of 80%, belonging to the 'good' category. This indicates that the learning model, particularly in its social system aspect, can create interaction among the students. Meanwhile, reaction principle and supporting systems achieved the same score of 80%, belonging to 'good' category. This indicates that the learning model can maintain the students' intellectuality spirit, and use other learning media that can support the teaching-learning process. Overall, it can be concluded that the webquest-assisted problem based learning model has been valid and usable.

The result obtained from the learning media expert's validation, of the webquest media, shows that the software reengineering aspect obtained a score of 90%, belonging to the 'very good' category. This indicates that webquest is effective and efficient in developing and using

learning media, and is simple to operate. Visual communication obtained a score of 85%, belonging to the 'very good' category, indicating that the webquest is communicative, creative, simple and attractive. Further, its layout design, typography, and color appearances are good. Considering the result of learning media expert's validation, it can be seen that webquest is a valid and usable learning media.

The result obtained from the material expert's validation on the webquest media shows that the learning design aspect obtained a score of 88.3%, belonging to the 'very good' category. This indicates that the material contained in webquest has clear learning objectives, and the relevance of its learning objective, to Standard Competency/Basic Competency/Curriculum, is considered good and it generates learning motivation.

The results obtained from validation of webquest-assisted problem based learning conducted by the practitioners, in this case, the Economics teacher in the school, shows that this media obtained a score of 82.2%, belonging to the 'very good' category, with a total score of 73. As such, the practitioners conclude that this webquest-assisted problem based learning model is valid and usable.

The result obtained from the small-scale trial of the webquest-assisted problem based learning medol, using an observation sheet, conducted by the subject teacher, shows that the model can perform well corresponding to the learning procedure specified. Further, considering the result of the questionnaire, on webquest-assisted learning media distributed during the trial phase, it can be seen that the feasibility of webquest's appearance aspect obtained a score of 640. The feasibility of material presentation aspect obtained a score of 520, and the feasibility of webquest's advantage aspect obtains 985, with a percentage of 84.11%, belonging to the "very good" category. Thus, it can be concluded that the webquest learning media, used in the development of problem based learning model, is "very feasible".

The effectiveness of the Webquest-assisted Problem Based Learning Model

After the draft, the webquest-assisted problem based learning model has been validated by experts (learning, learning media, material experts) and practitioners. The model then undertook a small-scale trial. Furthermore, following the small-scale trial, some revisions were made to perfect the learning model to be used in the extensive trial, to assess the effectiveness of webquest-assisted problem based learning model.

To assess the effectiveness of the learning model, two classes were used; experiment and control classes. In this research, the 11th Social Science 1 grade was used as the experiment class and the 11th Social Science 2 grade was used as the control class. The learning process in experiment and control classes was conducted in six meetings. The data on the students' cognitive learning outcomes, in experiment and control classes, includes pre-test and post-test scores, as well as gain score. Data of students' cognitive learning outcome is presented in the table below.

The result of the pre-test, on students' economic learning outcome score in control and experiment classes, shows that the mean pre-test score of the control class was 57.30, and the score of the experiment class was 54.22. It can be concluded that there is no significant difference in the mean pre-test score between control and experiment class, because the difference is very small; 3.08. Thus, control and experiment classes have equal intelligence levels; the next step can be conducted.

The analysis was conducted using t-test was with IBM Software, finding a significance value of 0.126, belonging to the 'insignificant' category, ($> \alpha$ (0.05)). This indicates that the control and experiment groups have similar levels of understanding. The result of pre-test on the students' economic learning outcomes is also analyzed using the t-test formula. The T-statistic

value obtained from pre-test on the control and experimental groups is 1.555, with a t table of 2.006. Thus, t statistic < t table, and H0 is supported, meaning that there is no difference in understanding level between the control and experimental groups. It can be said that both groups have equal understanding levels.

The results of the post-test on students' economics learning outcome score shows that the control class obtained a mean score of 73.63, while the experiment class obtained a mean score of 82.00. The result of analysis using t-test, with IBM SPSS 21 software, shows a significance value of 0.000, belonging to the 'significant' category, (< α (0.05)), indicating that the result of the post-test for the experiment group is better than that for the control group, with a significance difference.

The results of the post-test on students' economics learning outcome score, in cognitive aspects, for the control and the experiment groups, is also analyzed using t-test. T-statistic value obtained from the post-test of the control and the experiment classes is 5.548, with a t table value of 2.006. Thus, t statistic > t table, meaning that the increase in the economics learning outcome score is better (higher) than that in the control group. The results of the post-test on students' economics learning outcome score, in affective aspect, for the control and the experiment groups is also analyzed using t-test. From the result of the analysis, using t-test with IBM SPSS 21 software, a significance value of 0.000 is found, belonging to the significant category, (< (0.05)). The significance value is less than 0.05, meaning that H1 is not supported. This indicates that there is a significant difference in mean scores of affective learning outcome, between students in the control and those in the experiment classes. This means that the learning outcome of affective aspect, for the experiment class is better than that for the control class. Meanwhile, the score of students' learning outcome, in the psychomotor aspect, having been analyzed using t-test, shows that a significance value is less than 0.05 meaning that H1 is

supported. This indicates that there is a significant difference in mean scores of the psychomotor aspect of the learning outcome between the control and the experiment classes. This means that the learning outcome of the experiment class, is better than that of the control class.

It can be concluded that the webquest-assisted problem based learning model improves the economics learning outcomes of students better.

Conclusion, Implication, and Recommendation

Conclusion

Considering the result of the research, the following conclusions can be drawn:

a) The *Webquest*-assisted problem based learning model is a valid learning model. It is usable in the learning process in the class, when the following characteristics are fulfilled:

  1) An Internet network has been provided in the school, and it is accessible to both teachers and students.

  2) Some facilities, such as LCD are provided in every class.

  3) The school has implemented the 2013 curriculum.

  4) The Teacher is able to operate computer technology.

  Through the development procedure and validation process, the validation of learning expert, learning media expert, learning material expert, and practitioners, the webquest-assisted problem based learning model becomes a valid learning model.

b) The *Webquest*-assisted problem based learning model is used effectively in the learning process and can improve the students' learning outcomes. This is confirmed by the result of the effectiveness test, showing that the mean score of learning outcomes in the experiment class is significantly higher then that in the control class. This indicates that the improvement of the learning outcomes in the experiment class is better than that in thecontrol class.

Implication

Considering the conclusion above, the implication of research is as follows:

a) To the teacher

1) Increasing the teachers' knowledge on learning models that can improve the students' problem solving ability and activeness.

2) Improving the teachers' ability to use computer and internet-based technology.

b) To Students

3) Making the webquest-assisted problem based learning model the joyful learning model.

4) Improving the students' learning outcomes through the process involving their active participation in understanding the specified basic competencies.

c) To the school

1) Improving the quality of school through improving learning process and facilities in the form of the webquest-assisted problem based learning model.

2) Improving the school's outcome in the form of improving teachers and students' skills.

d) To Researchers

1) Applying the knowledge or science concerning education science and learning.

2) Increasing the researchers' insight into internet technology-based learning models; it can be used to equip the researchers to be professional educators in the future.

1. Recommendation

Considering the conclusion and the implication above, the author recommends:

a. Headmasters

1) To provide adequate infrastructures in order to improve teacher and students' creativity in the learning and to improve of the students' economics learning outcome.

2) To hold some training concerning the use of computer technology or internet-based technology.

3) To keep responding to the development of theories about cooperative learning models and to appeal to the teachers to apply the learning models that can make the students more active.

b. Teacher

1) No longer to explain everything to the students. Give the students the opportunity of practicing and learning to find their answer themselves, and to use learning strategies and models which make the students more active.

2) To select thoroughly the learning models appropriate and compatible to the material to be taught.

3) To be opened to various information and to follow technology development such as computer technology and computer technology, and to utilize technology for the learning process in the school.

4) To pay more attention to the use of learning media by preparing everything well before teaching the class. The use of varying learning media can make the students learning more vigorously in the class and can keep the students far away from saturated and bored feelings.

c. The Students

1) To learn thoroughly the *webquest* content containing economics material for the 11th grade, both independently and under the teachers' guidance.

2) To ask the teachers for help concerning the use of *webquest*.

d. Other researchers

1) To use this study as a reference for conducting similar studies by developing learning models and to expand this study by adding other independent variables with other equivalent learning models. To use this study as a reference for conducting similar studies, by developing webquest learning media into a more interesting learning media.

Table 2. Economics Learning Outcome Score of Students in Control and Experiment Classes

Component	Pre test		Post test		Gain	
	Control	*Experiment*	*Control*	*Experiment*	*Control*	*Experiment*
	(C)	(E)	(C)	(E)	(C)	(E)
Mean	57.30	54.22	73.63	82.00	16.33	27.78

Source: Data Processing Result in 2018.

References

Ahmadi, Khoiru, I., & Amri, S. (2012). *Model Pembelajaran Paikem Gembrot*. Jakarta: PT Prestasi Pustakaraya.

Asep, J., & Abdul Haris. (2012). *Evaluasi Pembelajaran*. Yogyakarta: Multi Presssindo.

Borg, W. R., & Gall, M. D. (1983). *Educational Research*. United States Of America: Von Hoffman Press, Inc.

Faturrahman, I. K., Ahmadi, S. A., & HA, S. (2012). Pengantar Pendidikan. *Jakarta: PT. Prestasi Pustakaraya.*

Gulo, W. (2008). *Strategi Belajar Mengajar (Cover Baru).* Grasindo.

Majid, A. (2013). *Strategi pembelajaran.* Bandung: PT Remaja Rosdakarya.

Rachmawati, U., & Madya, S. (2014). Pengembangan Webquest Sebagai Media Instruksional Membaca Siswa SMA Negeri 1muntilan. *Jurnal Kependidikan: Penelitian Inovasi Pembelajaran, 44*(1).

Riduwan. (2014). *Pengantar Statistika Sosial* (Alfabeta, Ed.). Bandung.

Slavin, R. E. (2009). Cooperative Learning Teori Praktek dan Riset translated by Nurulita Yusron. *Bandung: Nusa Media.*

Sujatna, M. L. (2012). *WEBQUEST SEBAGAI MEDIA PEMBELAJARAN BAHASA BERBASIS ICT.*

Suprijono, A. (2012). *Cooperative Learning.* Yogjakarta: Pustaka Pelajar.

Widoyoko, E. P. (2009). *Evaluasi program pembelajaran* (Vol. 91). Yogyakarta: Pustaka Pelajar.