



## The Development of Internet-Based Economic Learning Media using Moodle Approach

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### Abstract

The objectives of research were to develop an internet-based economic learning media using MOODLE approach to improve the learning outcome of Senior High School Students in Bengkulu City. The method employed in developing an internet-based economic learning media with MOODLE approach was Borg & Gall's Research and Development method encompassing four stages: preliminary study, development, trial, and dissemination. Trial staged employed Pretest-Posttest Control Group Design. The target of research was Senior High Schools in Bengkulu city with an independent sample test being the technique of analyzing data. From the result of research, the following conclusions could be drawn. Internet-based economic learning media using MOODLE approach had been developed successfully to improve the learning outcome of the 11th IIS (Social Sciences) graders of Senior High School.

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## INTRODUCTION

The success of the development of education in establishments of education strongly influenced on the availability of supporting components of education. One of the components of the development of education is the curriculum. The use of the curriculum developed in units of education according to the needs and challenges that exist in the world today. The curriculum should be developed along with the development of science, art, technology and the demands of competence to be achieved as the educational objectives so that the construction of a civilization of human resources in Indonesia can be met according to with the ideals of education in Indonesia in the future.

The quality of human resources is very determining the progress of a nation. The quality of human resources both depend heavily on the quality of education and the role of education in society, so that it will form a community of smart, vibrant, active, instrumental in the development of the national economy as well as democratic. Curriculum development should be addressed positively as an instrument of formation of the quality communities in formal educational institutions. The existence of formal education was instrumental in shaping human resources able to compete with people from other countries, namely in the challenge era of sophisticated technology like this time.

Facing the development of science technology, the challenges of globalization in the future, as well as to realize the goal of national education, as formulated in the Act No. 30 of 2003 article 3 namely the development potential of students to being a man of faith and pious to God Almighty, precious, healthy, have learned, accomplished, creative, independent, and become citizens of a democratic and responsible Government, in this case the Ministry of education and culture developed a curriculum that is in Indonesia namely 2013 Curriculum.

The development of information technology has brought huge changes to the advancement of the educational world. As the development of the learning methods are also a lot of progression, good personal learning methods as well as the media in the process of learning. The form of the development of information technology applied in the world of education is an internet-based learning. According to Zhang (2006) the Web is an ideal medium to provide the material to the students. The granting of the learning materials via the web can provide information to students without limited by space and time. After the expansion of the internet source of information obtained could be more diverse, distance and time are no longer an obstacle to not find out any information. Then this internet-based learning media needs to be developed so that by using this medium can interest students so that they can improve student learning outcomes.

Media MOODLE (Modular Object-Oriented Dynamic Learning Environment) is a cloud-based media can be accessed via a computer or smartphone must be connected with the internet. This media can also minimize abuse smartphone by students while the ongoing learning process in the classroom, as well as familiarize students to learn ICT-based to meet the digital era where the current national examination has been implemented online. Research results, Chen Lan, Chiu & Lan (2014:1194) shows that the Media e-learning by utilizing MOODLE in a school curriculum can help improve student learning outcomes, as well as the students more confidence in learning and mastering the content more material in learning. As for the content of some of the learning activities are supported by MOODLE is a form of learning materials in the form of electronic books, Video learning and Ppt, chat, discussion forums, quizzes, and surveys. Facilities discussion forum can help students are swapped for mutual information between students as well as teachers, without the limited time and space. Students can also practice questions in the quiz that has possible independently.

Media learning is everything that becomes a means of delivering information from the sender to the recipient so that what is delivered can be well received. This is in line with the opinion Smaldino, Lowther & Russel, (2007:6) that the Media is a means of anything that brings information between a source and a receiver. Same is the case with the opinion Arsyad (2002:4) that the media is all forms of intermediaries

used by humans to communicate or spread the idea, ideas, or opinions so that ideas, ideas or opinions expressed it to the recipient intended recipients.

Then the results of the survey of statistical data the Association organizing the Services Internet Indonesia stated that the number of internet users in Indonesia year 2016 reached 132.7 million users or around 51.5% of the total population of Indonesia 256.2 million. Is the largest internet user in Java with a total users 86,339,350 users or about 65% of the total internet user. Order in the next internet users are in Sumatra, with a total of 20,752,185 users or about 15.7%, with a total of 8,454,592 users or about 6.3%, Kalimantan, with a total of 7,685,992 or about 5.3% as well as Bali and Nusa Tenggara, with a total of the user 6,148,796 or about 4.7%.

According to Power (2012) defines economics as a social science and procurement. Meanwhile according to Mankiw, Quah & Wilson (2014:4) Economics is the study of how societies organize scarce resources. E-learning is an abbreviation of electronic learning which is a new way of teaching and learning using electronic media especially the internet as system analytical study. The emergence of the term new media very closely related to the presence of the internet today. As it says Flew (2005:4) the internet is a medium that most widely discussed currently and is a very important media in the development of the media. In the research of Andrews, Tynan, James, (2011) said the importance of internet-based media as a means to optimize learning. Ahmadi & Hermawan (2013:68) the internet is a global communications network that connects across computers around the world though different operating system and machine.

Naidu (2006:6) e-learning is a network of information and communication technology in teaching and learning. The terms used to describe the study of online learning, the learning web-based learning, Gaussian, basically all refers to the process of education that make use of technology in learning activities teaching. Broadly the definition of e-learning expressed by Surjono (2013:2) i.e. the delivery of the learning material through an electronic media such as the internet, the internet, satellite broadcast, audio/video tape, interactive TV, CD-ROM, and computer-based training (CBT). Then according to Rianto, Winarno & Wahyudi (2016:3); Mulyati & Bakri (2017:25) E-learning is the process of learning (learning) using/utilizing information and communication technology (ICT) as tools that can be made available whenever and wherever it is needed so that it can cope with the constraints of time and space. One of the development of e-learning approach is to use MOODLE.

E-learning can support and fit to be used as a means of learning to access information, fill out the content of learning, communication, interaction, activity assessment for students as well as teachers (Burgess & Ice, 2011:164); Sharma, Chen, & Zhang (2014:120). According to Davidson & Rasmussen (2006:24) there are three possibilities in the development of system-based learning e-learning. LMS supports a range of activities, including: Administration, delivery of the learning material, assessment tasks and quiz, tracking & monitoring, collaboration, and communication/interaction. According to Ssekakubo, Suleman, & Marsden (2013:148); Dogoriti, Pange, & Anderson (2014:255); Surjono (2013:6) explained that one of the devices open source LMS is MOODLE.

MOODLE LMS is designed to facilitate collaboration, based on the approach of online learning and the discovery of Cahir, McNeill, Bosanquet & Trawoger (2014). While according to Cole & Foster (2008:7) MOODLE is a web-based device that can be accessed through a web browser. But according to Ismanto (2012:415) MOODLE is the road to education without borders a pioneer that will build creativity and thought.

According to Sampurno, Maulidiyah & Puspitaningrum (2015:54) the development of technology-based learning, computer media or e-learning such as MOODLE is an appropriate learning media development to be applied in accordance with the demands of the curriculum of 2013. MOODLE stands for Modular Object-Oriented Word Dynamic Learning Environment.

## **METHOD**

This type of research is research and development, a process of developing devices or products is done through a series of research using a variety of methods in a cycle that passes through various stages. The stages are: 1) the study of the various research findings pertaining to the device that will be used as the product being developed, 2) developed an early form of the device based on the findings of that research, 3) performed a series of tests the field (three times or more experimentation) at the place of use of the product, and 4) revise product to fix various flaws and errors that were found from the results of each test field.

Methods of research and development can be defined as the scientific method for researching, designing, producing and testing the validity of a product that has been produced while Borg & Gall (2003) defines research and development in education based on the model of research and development in industry, where research results are used to design new products and procedures, and further tested the field systematically evaluated and improved to meet the criteria specific i.e. the effectiveness, quality, and meet the standards of.

This research activity is research and development in the learning field of education media to improve and enhance the quality of learning at school. The purpose of this research and development is to develop the product in the form of internet-based economy learning media by using the approach of MOODLE.

Data collection techniques used in this study, includes questionnaires/question form, observation, interviews and validation team of experts (the expert judgment). Observations and interviews were conducted to obtain information directly on the accounting process of learning at school. The now used to perform analysis of the needs of teachers and students, as the basis for consideration in developing the required learning media in the school. Sheet validation is used to assess the feasibility of the media that have been developed by media experts, expert content, linguists, and practitioners, i.e. accounting teacher at the school. A range of advice and input from a team of experts (the expert judgment) will be used as the basis in fixing the media products produced thereby acquire media digital comics a proper accounting to use in learning. Technique of data analysis used a descriptive qualitative analysis i.e. for observation and interviews, quantitative and descriptive question form and validation to the media by team of experts.

## **RESULTS AND DISCUSSION**

Research conducted is the development of internet-based economy learning media use MOODLE approach to improve the learning results of high school students in the city of Bengkulu. The purpose of the research conducted was to develop and to know the effectiveness of cloud-based media using MOODLE approach to content development and economic growth. This research was conducted in class XI IIS (social science) in SMA Negeri 2, SMA 6 and SMA Negeri 4 Muhammadiyah Bengkulu.

### **Research and Collection of Information**

At this stage, researchers did meet initial data to collect information both from observation, interviews, as well as the literature review to identify the problems encountered in learning and then lifting it into problems of research and then prepare the outline of a research framework to address the issue. Following the preliminary results of the study are obtained from observation, interviewing teachers, students and the school infrastructure.

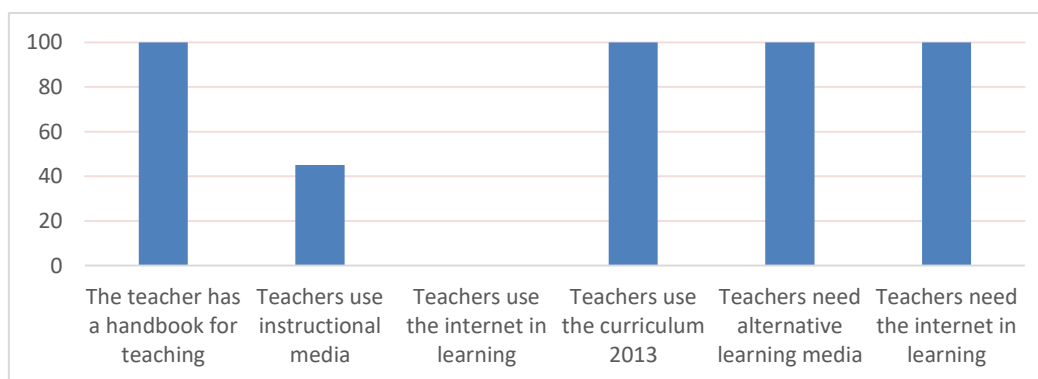
The results of the interviews with teachers of economic subjects in SMA Negeri 2 Bengkulu City, SMA Negeri 6 Bengkulu City and SMA Muhammadiyah Bengkulu City at 4 get the data value of the final exams of the Semester students XI IIS 2017/2018 school year on economic subjects is still low. With an interval value of  $\geq 75$  and  $\leq 75$ , then get the following data:

**Table 1.** The value of the final exams of the Semester economics Subjects in SMA of the city of Bengkulu

Interval Value	SMA Negeri 2 Bengkulu		SMA Negeri 6 Bengkulu		SMA Muh 4 Bengkulu	
	Total	%	Total	%	Total	%
≤ 75	39	60.94	34	56.67	36	60
≥ 75	25	39.06	26	43.33	24	40
Total	64	100	60	100	60	100

Still the number of students who did not complete due to a lack of understanding of students in understanding the concept of economic studies. So many students are passive while the learning process whereas a curriculum stressing learning in 2013 students so the students should be more active in the learning process. Based on the above shows that the exposure is still low so that student learning outcomes need to be optimized in order to achieve the desired learning objectives.

Other information of the results of the interviews to the teacher via the question form is obtained the following data:



**Figure 1.** Percentage of the results of the needs analysis question form teachers

Based on the results of the interviews and the results of charging the now economy class by the teacher at the school IIS XI in SMA Negeri 2, SMA 6 and SMA Negeri 4 Muhammadiyah Bengkulu. At 4 obtained information that the teacher has not been entirely using ICT in the media process analytical study in particular internet-based media have not been there at all who use it. This internet-based media very need to be developed to support the learning process processed.

**Preparation of Draft Media**

The material used in this medium is a material that is in accordance with the curriculum of basic competence in 2013 economic development and economic growth is being taught in class XI IIS. Subject matter which gathered basic competencies in the economic development and economic growth include: understanding economic development, economic development planning, an indicator of the success of economic development, factors that influence economic development, assessing the achievements of economic development, development issues emerging economic, policy and strategy development, understanding of economic growth, differences in economic development with economic growth, how to measuring the economic growth and the theory of economic growth. The material already gathered sourced from books of economic subjects in the curriculum-based 2013 already.

**Designing e-book**

The e-book is a book that can be opened electronically via computer. The e-book is an abbreviation of the word Electronic Book or e-book. The e-book used a file with format PDF (Portable Document

Format) which can be opened with Acrobat Reader program or the like. Most e-book using the form PDF format because the PDF format is easier in use and easy in processing manually.

### Create a Website

Create a website in development of media using MOODLE researchers must first prepare the domain and hosting. Hosting is the electronic communications Network that connects between computers around the world to save the satellite data built site. The domain is the address of the site from a websites that were built as well as in the development of this is [www.pelajaranekonomi.com](http://www.pelajaranekonomi.com).

### Linked Content into the Website

After installed into MOODLE hosting next link content in media are developed. In the media developed it there is some content that is a content matter, content assignments, exam content, content discussions, and content value.

### Making Use of the Guidebook

The making of the handbook to serve as a tool for teachers and students in using the media. PDF-shaped guide books so can directly be downloaded if necessary. Handbook is already directly linked on the front page in the media, so before the login teachers and students can see the Guide.

Device evaluation of internet-based media development using MOODLE approach is a question form for the validator. Things that should be in validation/evaluated is linked material, language and the media.

Media economic studies developed not only can be accessed through the web on your computer but can also download the application so that it is always connected in the mobile android and iPhone are owned by the student or teacher. This application can be downloaded at [www.pelajaranekonomi.com](http://www.pelajaranekonomi.com).



Figure 2. Page to download media applications through the iPhone and android

### Expert Validation

Validation of the experts is to test the feasibility of a product which was developed before the product is used for tested. The result of the validation of the experts is the basis to make improvements in the media are developed. The improvements done based on advice and enter the given by experts so as to

get the results that the products developed are worth to be used or tested. In this medium the validation will be done by media experts, expert content, and linguist and expert practitioners. Validation for the development of these products will be provided to the experts in their field validator.

**Table 2.** Expert Validation

Validation I				
Indicator	$\sum ni$	$\sum N$	%	Interpretation
The scope of the material	14	15	93.33%	Very good
The accuracy of the material	11	15	73.33%	Good
Date and Conceptual	11	15	73.33%	Good
Observance of law and legislation	10	10	100%	Very good
Presentation techniques	22	25	88.00%	Very good
Supporters representation	18	20	90.00%	Very good
Total	86	100	86.33%	Very good
Validation II				
Indicator	$\sum ni$	$\sum N$	%	Interpretation
The scope of the material	14	15	93.33%	Very good
The accuracy of the material	14	15	93.33%	Very good
Date and Conceptual	13	15	86.67%	Very good
Observance of law and legislation	10	10	100%	Very good
Presentation techniques	24	25	96.00%	Very good
Supporters representation	18	20	90.00%	Very good
Total	93	100	93.22%	Very good

Based on the results of the validation data both from material experts declared the entire material indicators revealed very decent with the average value of a 93.22% this means that the material is already feasible for use in the learning process.

**Table 3.** Validation Language

Indicator	$\sum ni$	$\sum N$	%	Interpretation
Conformity with the development of students	9	10	90%	Very good
Readability	5	5	100	Very good
Ability to motivate	9	10	90%	Very good
Straightforward	9	10	90%	Very good
Coherence and order flow of thought	10	10	100%	Very good
Compliance with the rules of the language of Indonesia	8	10	80%	Very good
The term and the use of the symbol/emblem	13	15	86.66%	Very good
	63	70	90.95%	Very good

**Table 4.** Validation of media

Validation I				
Indicator	$\sum ni$	$\sum N$	%	Interpretation
Course overview and introduction	16	20	80.00%	Very good
Learning objectives	14	15	93.33%	Very good
Assessment and measurement	14	15	93.33%	Very good
Assessment and materials	12	15	80.00%	Very good
Course technology	9	10	90.00%	Very good
Accessibility	13	15	86.66%	Very good
	78	90	87.22%	
Validation II				
Indicator	$\sum ni$	$\sum N$	%	Interpretation
Course overview and introduction	17	20	85.00%	Very Good
Learning objectives	14	15	93.33%	Very Good
Assessment and measurement	14	15	93.33%	Very Good
Resource and materials	12	15	80.00%	Very Good
Course technology	9	10	90.00%	Very Good
Accessibility	13	15	86.66%	Very Good
	79	90	92.22%	Very Good

On the basis of table 4 of validation I and II showed a very decent results with the accumulated average of 89.72%. Thus the media declared worth and already qualified for use in the learning process.

**Table 5.** Practitioner Validation

Indicator	$\sum ni$	$\sum N$	%	Interpretation
<i>Usefulness</i>	32	40	80%	Very Good
<i>Ease of use</i>	21	30	70%	Very Good
<i>Result demonstrability</i>	12	15	80%	Very Good
<i>Compatibility</i>	12	15	80%	Very Good
<i>Accessibility</i>	12	15	80%	Very Good
<i>Reliability</i>	12	15	80%	Very Good
<i>Continuance intention</i>	4	5	80%	Very Good
	105	135	78.57%	Very Good

## CONCLUSION

The development of internet-based economy learning media using MOODLE is developed and successfully approaches deserve to be used in the learning process. It is based on validation testing experts, limited and extensive testing that is already done. The result of the validation material with an average of 93.22% this means that the material is already feasible for use in the learning process, then from linguist obtained average value of 90.55% this means that the use of languages in the media developed it has been very It deserves to be used in the learning process, further validation of media experts with a grade average of 89.72% thus media declared viable and are already eligible for use in the learning process, the



practitioner validation the average gained 78.57% viable criteria for you to use. Internet-based media using MOODLE approach also got good and positive response of these students on the basis of trial results is limited and extensive trials. Limited trial results obtained result is well worth the average of 83.83% while for extensive test results average 77.95 means media deserve to be used.

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