

Moodle-Based Speaking Learning Model

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Abstract. This study is aimed to developing a Moodle-based speaking learning model for Students of Technology Department at Teacher Training and Education Higher School of Muhammadiyah Kuningan. Moodle is one of the Learning Management System. It is developed by lecturers in making teaching and learning well. The English materials given is English for Specific Purposes. It tends to the English learning given to the non-English department students. Teaching ESP is started by diagnosing the situations of class by means of need analysis based on Dudley-Evans and St. John's Model. Dudley-Evans and St John's model consists of seven aspects; personal information about learners, language information about target situation, learners' lack, learners' needs from course, language learning needs, how to communicate in the target situation, and professional information about learners. The steps are based on Borg and Gall's model. The steps are collecting data, planning, developing first draft of product, testing the developed product, revising the developed product and revising the final draft of product. The data is collected by questionnaire, interview, group discussion, observation, documentation, and speaking test. Quantitative and qualitative are used in analyzing data. The result of this research is the effectiveness of learning speaking by using Moodle. The experimental research is used to investigate the effectiveness of Moodle in learning. It indicates that the Moodle-based Speaking Learning Model improves the students' speaking skill at ESP Lecture for the Students of Teacher Training and Education Higher School of Muhammadiyah Kuningan.

1. Introduction

The dichotomy of perspective on English is categorized into two terms, English as Second Language or ESL and English as Foreign Language or EFL. EFL and ESL in other languages can also be juxtaposed with language needs that are only formalistic on the one hand while on the other hand languages are also used according to public needs [1]. ESP is learning English according to the needs of students in each profession later [2]. English learning in ESP refers to learning based on needs. This needs analysis is understood as a content and methodology for achieving specific needs in a particular context [3]. Specific needs referred to are the needs of language learners in their profession in the future.

While Brown and Nunan explained that needs analysis is a set of procedures that can be used as parameters in a learning. These parameters include the criteria and rationalization of the learning



group, the selection of teaching materials, teaching methods, and the duration of the teaching and learning process [4]. From the opinions of the experts above, needs analysis is a strategic step in ESP learning. This stage is carried out just before the lecture begins. The purpose of this needs analysis activity is to obtain comprehensive information about the initial conditions of students in the context of language skills, the purpose of language learners in participating in ESP classes, the target skills to be achieved, the desired learning methods and media, and the preferences of the learning atmosphere in the classroom.

Improving speaking skills is a productive skill in language learning. In practice, learning speaking requires learning media that can stimulate student creativity to be able to realize that the main function of language is for communication. One important reason for improving speaking skills can be based on three important terms that must be built as principles of learning, namely; commitment, community and bravery [5]. These three key words can be a basic principle in learning speaking that building self-awareness (commitment) is the main foundation for collaboration (community) in the language community and doing direct practice (bravery) without the burden.

ESP learning conducted at STKIP Muhammadiyah Kuningan was developed through the Learning Management System or Moodle LMS. Moodle or Modular Object Oriented Dynamic Learning Environment is one alternative LMS that can be used in ESP language learning. The urgency of using Moodle LMS is based on the ease of access of students in using the LMS in a mobile form so that it will provide high motivation in their learning. Moodle as one type of LMS, can be used and developed by lecturers and students as needed. In this ESP learning, Moodle is used to improve English speaking skills. In this context the use of Moodle LMS is included in the category of MALL or Mobile Assisted Language Learning.

2. Learning Model

Joyce suggested that the learning model is a reflection of the experience of the teacher and students during learning. Furthermore, the learning model can be done by a teacher when he helps his students obtain information, ideas, skills, values and ways of thinking in order to be able to express themselves (students). The model also deals with student and teacher behavior and the activities carried out by them [6], creating students who are reliable or powerful learners, characterization of a basic theory that is combined with the phenomenon at hand [7], a series of activities that begin with a diagnosis of the learning situation and end with follow-up. These stages consist of; diagnose the learning situation, plan lectures (in each meeting), plan teaching (every semester or one year), guide learning activities, evaluate learning and carry out follow-up.

2.1. ESP learning

Anthony said that English for Specific Purposes or ESP is an approach to learning English with goals aimed at the needs of students. The focus of the teaching is of course related to language, skills, discourse and genres that support the needs of language learners [8]. These needs are related to future learners' careers (Çelik et al., 2018). ESP also refers to teaching and learning that focuses on one domain of language use, for example aspects of communication needs with specific themes (Hyland, 2019). These needs can be in the form of a career to be achieved and related to English competencies and skills.

ESP introduced C.L. Barber in the 1960s [8][9]. He tried to implement English teaching for science and technology classes. Starting that year, ESP developed in various educational institutions especially at the tertiary level with a diversity of English language needs in each department. Thus, ESP terminology continues to evolve according to the needs of learners which results in the term of this course being adjusted to the existing content. Paltridge and Starfield argued that ESP developed into English for Engineers, English for Aviation, and English for Advertising, English for Academic Purposes (EAP), English for Occupational Purposes (EOP), and English for Vocational Purposes (EVP) [8]. From some of these terms, ESP is a terminology that covers everything [1]. It is intended

that ESP has the main goal of learning English at the academic level with a focus on deepening four English language competencies and skills.

2.2. Learning management system moodle

MOODLE stands for Modular Object-Oriented Dynamic Learning Environment. Moodle has complete features for distance learning needs (distance learning or e learning). Basic features of Moodle include; open source, full integration, customizable, extensible, accessibility, mobile ready, analytics and tracking, socialize your learning. The Moodle features used at the college level include; online exams, single sign-on with existing systems, active learning, online grading, online and offline learning.

Learning Management System (LMS) is a system to facilitate the management of learning based on information and communication technology that integrates several aspects of modern education. This meant that open source code was supported by a community of system developers in various parts of the world [10, p. 983]. LMS can be used in Internet-enriched learning but is more suitable for blended / hybrid learning and more complex full online learning [11, p. 397]. LMS has at least user management, learning, material and evaluation features. One LMS that has been widely used for a long time is Moodle, with users in 235 countries, with the majority of schools in Finland generally using Moodle [12, p. 123]. Moodle is an LMS developed by Moodle HQ supported by funding from nearly 80 partners around the world [13].

Moodle has advantages including: worldwide trust, specially designed for teaching and learning, easy to use, free, always updated, flexible, full custom, all-in-one, suitable for all scales of learning, strong safe and private, can be used with all device, and supported by the community. But the features in Moodle have not yet been fully explored, with only six features commonly used [12, p. 122]; [14, p. 859]. So this research will try to explore the features of Moodle as a whole and be used in learning in ESP class colleges.

2.3. Blended Learning

Blended learning is a form of learning that combines electronic learning systems or e-learning with face-to-face or traditional systems [15, p. 237]. Torrisi Steele & Drew called BL as the use of technology in face-to-face learning while Garrison & Kanuka stated that BL was the integration of face-to-face learning experiences and online learning experiences [16, p. 2]. Blended learning is one of the learning models that can provide space for teachers and students to develop teaching and learning creativity. This creativity is channeled through the use of assistive devices or learning media that are in accordance with the times [17, p. 4]. The era of the industrial revolution 4.0 has placed IT as one of the parameters of progress on all fronts. Thus, blended learning has urgency in terms of teaching because the combination of transfer of values (face to face meeting) and transfer of knowledge (online learning) or in other terms that face to face meeting is a process of instilling learning principles while the use of e-learning acts as support to improve the academic quality of students [18, p. 152].

Oakley said that blended learning is an effective approach to absorb passive knowledge into massive learning [19, p. 4]. Blended learning is a trend in contemporary learning because it has a positive impact on increasing student motivation in learning. Student motivation in learning is seen in the aspect of skills that have increased due to the existence of active learning. Active learning can be reflected in terms of communication, information literacy, creativity and collaboration that can encourage students to be able to use digital devices in learning [19, p. 5].

2.4. Learning Model Development

Learning model development is an activity carried out starting from designing, teaching and learning to evaluating. In other words, the development of the model relates to input, process, output to feedback. Model development in this context uses the ADDIE model. The ADDIE model is a detailed stage of analysis, design, development, implementation and evaluation [20, p. 68].

The ADDIE model is one of the most commonly used models in the field of learning design and serves as a guide for producing effective learning designs. ADDIE was first created by the Center for

Educational Technology at Florida State University. The naming of the "ADDIE" model refers to the general mnemonics for the five main steps in the model: A = Analyze, D = Design, D = Development, I = Implement and E = Evaluate Evaluation) [21]. The five stages are shown in Figure 1.

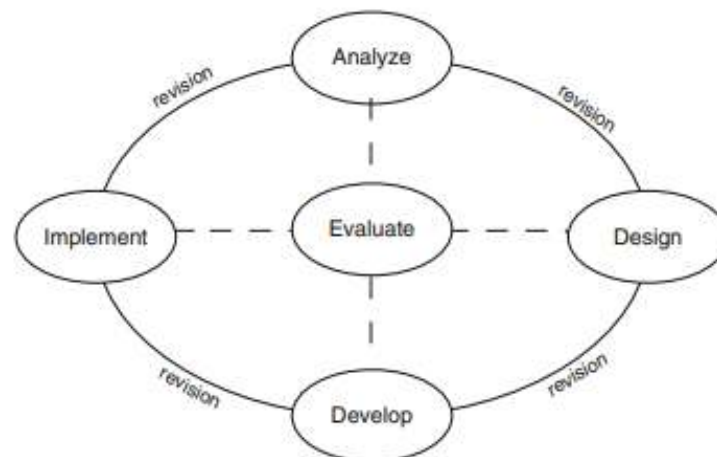


Figure 1. ADDIE development model

The first stage is Analyze. This stage is the first step in the ADDIE model. At this stage a definition of what students must learn in learning is carried out. There are three steps in this stage including requirements analysis, task analysis, and instructional analysis. *The second is Design Stage.* The Design Stage is the stage of finding answers to the following questions: "What learning strategies will achieve the goals?", "What are the goals?", "How will we know if the objectives are met?". Therefore in this stage the researcher must formulate how instructional designs are designed to be truly effective in ways that facilitate student learning and interaction with the material designed.

The third is Development Phase. Development Phase (Development) depends on the two previous stages, namely the analysis and design stages. That means, if the two previous stages have been done well, the development process will be easier to do. *The forth is The Implementation Stage.* The implementation phase is the stage of preparing the learning environment and involving students to apply the resulting product. *The fifth stage is Evaluate Stage (Evaluation).* The evaluation stage is the stage of assessing product quality and teaching processes before and after product implementation. The evaluation process consists of formative evaluation, summative evaluation and operational evaluation.

3. Method

The type of research used is research and development. The product produced in this research is a learning media based on a Learning Management System (LMS) MOODLE (Modular Object Oriented Dynamic Learning Environment). This learning media is intended to improve English speaking skills for students in the Mathematics Education Study Program and Information and Communication Technology Education at STKIP Muhammadiyah Kuningan. The research and development model that will be used in this study is the ADDIE model. The ADDIE development model consists of five stages: analyze, design, development, implementation, and evaluation[21]. Regarding the development of the MOODLE-based learning media, the development procedures carried out in this study are based on the stages of developing the ADDIE model. Analyze stage contains Analysis of Student Needs in ESP, Analysis of ESP learning media that has been used at the research site, Analysis of the materials, methods and duration of ESP learning. Design stage contains Designing *Learning Management System (LSM) MOODLE (Modular Object Oriented Dynamic Learning Environment)* based learning media. Develop stage contains draft 1, expert validity; if valid, it continues to draft 2 but if not valid it

reverses to draft 1. Implement stage contains testing (experiment pretest posttest one group design). Evaluation stage contains effective and readable till the end of final product.

Data collection instruments in this study are a series of tools used to collect data to answer the predetermined problem formulations. The instruments used to collect data in this study can be classified into four types of instruments based on their purpose. Each of them is used to collect data related to the validity, practicality, effectiveness and feasibility criteria of the instructional media compiled. These instruments include the following.

Table 1. Data Collecting Instrument

Criterion	Instrument	Sources
Validity	Validity Sheet	Expert
Effectivity	English Speaking Skill Test	Students
Media Viability	Questionnaire	Expert

This instrument is used to measure the validity of learning media developed, namely the Moodle (Modular Object Oriented Dynamic Learning Environment) Learning Management System (LMS). Validation is done by experts with the criteria of 5 rating scales, namely 1 is not good, 2 is not good, 3 is good enough, 4 is good, and 5 is very good. In addition, the validation sheet is also given space for the validator to provide comments and suggestions. Input given by experts is used as a consideration to improve learning tools. The validity assessment includes aspects of appearance, material suitability, practicality of the media, and language.

The effectiveness of instructional media is known after field trials on validated media. In this trial, learning is conducted on students of the Mathematics Education Study Program and Information and Communication Technology Education. Students' speaking ability is measured before and after treatment. In this regard, the instrument used to measure students' speaking abilities is an English speaking ability test. This test is carried out individually with the assessment aspect of extensive speaking in oral presentations including content and delivery assessments. Evaluation items in item content consist of 5 evaluation items and item delivery consists of 10 evaluation items.

Data that has been collected from the results of the study are then analyzed to answer the problem formulation that has been set. Data analysis was carried out with a variety of different techniques including analysis of media validity, analysis of the results of field trials and analysis of readability of learning media.

Data obtained from the validation sheet consists of validity assessment forms in the form of scores and comments and suggestions. Data in the form of comments and suggestions were analyzed qualitatively used to revise the product being developed. While the data obtained through the learning device validation sheet were analyzed using descriptive statistics. Data in the form of scores were sought for each aspect of all validators and then converted to qualitative data with five categories. Reference to changing scores into five categories using conversion scores. The reference for changing the scores is presented in the following table.

Table 2. Scoring conversion

Interval	Criterion
$X > \bar{X}_i + 1,8 S_{bi}$	Excellent
$\bar{X}_i + 0,6 S_{bi} < X \leq \bar{X}_i + 1,8 S_{bi}$	Good
$\bar{X}_i - 0,6 S_{bi} < X \leq \bar{X}_i + 0,6 S_{bi}$	Fair
$\bar{X}_i - 1,8 S_{bi} < X \leq \bar{X}_i - 0,6 S_{bi}$	Poor
$X \leq \bar{X}_i - 1,8 S_{bi}$	Very Poor

Note:

\bar{X} : Empirical Score Total

\bar{X}_i : mean

S_{bl} : standard deviation

In the field trials obtained data related to the effectiveness of the application of learning media developed in terms of students' speaking ability. The data obtained in the form of data from the test of speaking ability before and after treatment. The effectiveness of the media can be seen from the presence or absence of differences in the mean before and after the treatment is given. The analysis includes:

a. Normality test

H_0 : the data comes from normally distributed populations.

H_1 : the data comes from populations that are not normally distributed

Hypothesis testing is done using IBM SPSS Statistics with Kolmogrov-Smirnov test statistics.

Decision Criteria, H_0 accepted if significance $> \alpha$ (5%).

b. Average Difference Test

The average difference test is performed using the t test for paired samples if the data meets the normal assumptions and the Wilcoxon test if the data does not meet the normal assumptions. The testing hypothesis is as follows.

H_0 : the experimental class average is the same as the control class average.

H_1 : the experiment class average is not the same as the control class average.

Hypothesis testing is done using IBM SPSS Statistics with decision criteria, H_0 accepted if significance $> \alpha$ (5%).

4. Result and discussion

4.1. Data Description

In this section displayed data on research results including oral presentation score data. The oral presentation score data includes pretest data where the assessment is carried out before being given treatment and posttest data where the assessment is done after being given treatment. The oral presentation score data is displayed as follows.

Table 3. Statistics

		PRE	POST
N	Valid	25	25
	Missing	0	0
Mean		12.44	32.48
Median		13.00	32.00
Mode		13	32
Std. Deviation		1.530	1.960
Variance		2.340	3.843
Range		6	10
Minimum		9	30
Maximum		15	40
Sum		311	812

4.2. Research data analysis

In this section, whether the treatment will have an impact on changes in students' oral presentation abilities. Therefore students' oral presentation scores will be compared before and after treatment. However, before testing to show the differences in oral presentation scores of students before and after treatment, it must first be shown that the data are normally distributed. Tests carried out using the Kolmofoorov Smirnov test. If the data is normally distributed, the test is carried out using the t test for paired samples, meanwhile if the data is not normally distributed then the test is carried out using the Wilcoxon test.

4.3. Normality test

Normality testing is done to show that the data comes from populations that are normally distributed. Tests carried out using the Kolmogorov Smirnov test with the help of SPSS. The acceptance criteria in this test is if the Asymp value. Sig. (2-tailed) in the output above 0.05, then the data distribution is stated to meet the assumption of normality, and if the value is below 0.05 then interpreted as abnormal. The test results are displayed in the following table.

Table 4. One-Sample Kolmogorov-Smirnov Test

		PRE	POST
N		25	25
Normal Parameters ^{a,b}	Mean	12.44	32.48
	Std. Deviation	1.530	1.960
	Absolute	.203	.235
Most Extreme Differences	Positive	.114	.235
	Negative	-.203	-.163
Kolmogorov-Smirnov Z		1.014	1.177
Asymp. Sig. (2-tailed)		.255	.125

a. Test distribution is Normal.

b. Calculated from data.

From the above table, Asymp was obtained. Sig. (2-tailed) for pretest data of 0.255 and for posttest data of 0.125. Thus the Asymp value. Sig. (2-tailed) both in the pretest and posttest data is more than 0.05 so that the data distribution is stated to meet the assumption of normality.

4.4. Average difference test

After meeting the normal assumptions, testing the mean difference can be continued using the t test for paired samples. Testing is done using SPSS. The test results are determined by the significance value displayed on the output. This value then determines the decisions taken in the study. If the significance value (2-tailed) < 0.05 then there is a significant difference between the mean pretest and posttest data, but if the significance value (2-tailed) > 0.05 then there is no significant difference between the mean pretest and posttest data. The test results are displayed in the following table.

Table 5. Paired Samples Test

Table 3: Paired Samples Test									
		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		T	Df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	PRE - POST	-20.040	3.048	.610	-21.298	-18.782	-32.875	24	.000

From the test results obtained a significance value (2-tailed) of 0,000. This means that the significance value (2-tailed) <0.05 so it can be concluded that there is a significant difference between the mean pretest and posttest data.

Table 6. Domain Scoring

Domain	Aspect	Score
Content	Guidance and Information	18
	Content/ Multimedia Material	48
	Evaluation	34
	Total Score	100
	Assessment Category	Good
Multimedia Construction	Guidance and Information	15
	Multimedia Operational	46
	Systematics, Aesthetics and Media Design Principles	110
	Total Score	171
	Assessment Category	Fair
Multimedia Acceptance	Guidance and Information	20
	Multimedia Material	65
	Evaluation	25
	Design and Media Facilities	50
	Pedagogy Effect	25
	Total Score	185
	Assessment Category	Very Good

5. Conclusion

The research and development has found that MOODLE as one of the alternative LMS in learning ESP. This LMS has an appropriate system to enhance the students' speaking skill. The implementation of teaching and learning process has been implemented with ADDIE Model. The comprehensive steps that can arrange the process of learning systematically. This conclusion can be detailed in the next description.

The first, the students and the lecturers have the same needs in teaching and learning process. It is related with MOODLE as a system used in the class. The need analysis is the first step to find out the learning needs. The need analysis can be indicated with the result of early observation of the learning activity. Moreover, in this Industrial Revolution 4.0 era, e-learning is needed very much to support the students' skill and understanding of the study. The second, the implementation of learning needs systematic steps. ADDIE Model is the best alternative in making the learning activity running well. Started with analysis to know the condition of the class, design the lesson plan, develop the lesson plan, implement the model and taking the evaluation to know the learning progress. The third, ESP lecture uses blended learning. It's a combination between face to face learning and on line learning. In this case, ESP lecture is divided into two kinds of meeting method. The materials given are education technology issues. Those materials can be learnt and downloaded from this LMS. The students can develop their competence and skill in presentation. The prominent case in this skill is oral. The assessment used is oral presentation test. The forth, after testing, the LMS MOODLE is appropriate for teaching ESP. the LMS provides many features for supporting the speaking skill.

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